



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R03-OAR-2022-0347; FRL-9333-02-R3]

Federal Implementation Plan Addressing Reasonably Available Control Technology Requirements for Certain Sources in Pennsylvania

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is promulgating a Federal implementation plan (FIP) for the Commonwealth of Pennsylvania (Pennsylvania or the Commonwealth). This FIP sets emission limits for nitrogen oxides (NO_x) emitted from coal-fired electric generating units (EGUs) equipped with selective catalytic reduction (SCR) in Pennsylvania in order to meet the reasonably available control technology (RACT) requirements for the 1997 and 2008 ozone national ambient air quality standards (NAAQS). This action is being taken in accordance with the requirements of the Clean Air Act (CAA).

DATES: This final rule is effective on **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: EPA has established a docket for this action under Docket ID Number EPA-R03-OAR-2022-0347. All documents in the docket are listed on the www.regulations.gov website. Although listed in the index, some information is not publicly available, *e.g.*, confidential business information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available through www.regulations.gov, or please contact the person identified in the **For Further Information Contact** section for additional availability information.

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SUPPLEMENTARY INFORMATION:

I. Background

On May 25, 2022 (87 FR 31798), EPA published a notice of proposed rulemaking (NPRM) addressing NO_x emissions from coal-fired power plants in the Commonwealth of Pennsylvania. In the NPRM, EPA proposed a FIP in order to address the CAA's RACT requirements under the 1997 and 2008 ozone NAAQS for large, coal-fired EGUs equipped with SCR in Pennsylvania. As discussed in the NPRM, the FIP was proposed as an outgrowth of a decision by the United States Court of Appeals for the Third Circuit ("the Court"), which vacated and remanded to EPA a portion of our prior approval of Pennsylvania's "RACT II" rule which applied to the same universe of sources. See 87 FR 31798; 31799-39802.

The Court directed that "[o]n remand, the agency must either approve a revised, compliant SIP within two years or formulate a new Federal implementation plan." *Sierra Club v. EPA*, 972 F.3d 290, 309 (3rd Circuit 2020) ("Sierra Club"). On September 15, 2021, EPA proposed disapproval of those portions of the prior approval which were vacated by the Court. See 86 FR 51315. EPA took final action to disapprove the vacated portions of our prior approval. 87 FR 50257, August 16, 2022. EPA is now finalizing a FIP to fulfill the Court's order.

The collection of sources addressed by the RACT analysis in this FIP has been determined by the scope of the Third Circuit's order in the Sierra Club case and EPA's subsequent disapproval action. Herein, EPA is finalizing RACT control requirements for the four facilities that remain open and active that were subject to the SIP provision that the Court vacated EPA's approval of and that EPA thereafter disapproved: Conemaugh, Homer City, Keystone, and Montour. EPA's prior approval action and the Court's decision related to source-specific RACT determinations for the Cheswick, Conemaugh, Homer City, Keystone, and

Montour generating stations. The Bruce Mansfield and Cheswick facilities ceased operation, so there is no longer a need to address RACT requirements for those facilities, so are not included in this final action. Accordingly, there are a total of nine affected EGUs/units at four facilities in this action: three at Homer City and two each at Conemaugh, Keystone and Montour.

The Pennsylvania Department of Environmental Protection (PADEP) undertook efforts to develop a SIP revision addressing the deficiencies identified by the Third Circuit in the *Sierra Club* decision. PADEP proceeded to develop source specific (“case-by-case”) RACT determinations for the generating stations at issue. By April 1, 2021, each of the facilities had submitted permit applications to PADEP with alternative RACT proposals in accordance with 25 Pa. Code 129.99. Subsequently, PADEP issued technical deficiency notices to obtain more information needed to support the facilities’ proposed RACT determinations. Although additional information was provided in response to these notices, PADEP determined the proposals to be insufficient and began developing its own RACT determination for each facility. The outcome of this process was PADEP’s issuance of draft permits for each facility, which were developed with the intention of submitting each case-by-case RACT permit to be incorporated as a federally enforceable revision to the Pennsylvania SIP. Each draft permit underwent a 30-day public comment period,¹ during which EPA provided source-specific comments to PADEP for each permit. On May 26, 2022, PADEP submitted case-by-case RACT determinations for Keystone, Conemaugh, and Homer City as a revision to the Pennsylvania SIP. On June 9, 2022, PADEP submitted a case-by-case RACT determination for Montour as a revision to the Pennsylvania SIP. EPA has not yet fully evaluated those submittals and they are outside of the scope of this action. Any action on those proposed SIP revisions will be at a later date and under a separate action.

II. Summary of FIP and EPA Analysis

¹ See 51 Pa.B. 5834, September 11, 2021 (Keystone); 51 Pa.B. 6259, October 2, 2021 (Conemaugh); 51 Pa.B. 6558, October 16, 2021 (Homer City); 51 Pa.B. 6930, November 6, 2021 (Montour); Allegheny County Health Department Public Notices, December 2, 2021 (Cheswick).

A. Overall Basis for Final Rule

This section presents a summary of the basis for the final FIP. The overall basis for the proposal was explained in detail in the NPRM. The overall basis is largely unchanged from proposal, though as explained in the responses to comments and section IV of this document on the final limits, some adjustments were made to the resulting limits. For more detail on what was proposed, please refer to the May 25, 2022 proposal publication (87 FR 31798).

The basis for the final rule begins with the RACT definition. As discussed in the NPRM, RACT is not defined in the CAA. However, EPA's longstanding definition of RACT is "the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility."² The Third Circuit decision "assume[d] without deciding" that EPA's definition of RACT is correct. *Sierra Club* at 294. EPA is using its longstanding definition of RACT to establish the limits in this FIP.

The EPA proposed that RACT limits in this FIP will apply throughout the year. As discussed further in Section III of this preamble in response to comments on this issue, the EPA is retaining year-round limits because the limits herein are technologically and economically feasible during the entire year. While other regulatory controls for ozone, such as the Cross State Air Pollution Rule (CSAPR) and its updates, may apply during a defined ozone season, the RACT limits finalized herein do not authorize seasonal exemptions based on atmospheric conditions or other factors. As explained, this action is being finalized to meet the statutory requirement to implement RACT in accordance with sections 182 and 184 of the Clean Air Act. Implementation of RACT, and the definition of what is RACT, is not constrained by the ozone season or atmospheric consideration. Therefore, the limits finalized here apply throughout the

² See Memo, dated December 9, 1976, from Roger Strelow, Assistant Administrator for Air and Waste Management, to Regional Administrators, "Guidance for Determining Acceptability of SIP Regulations in Non-Attainment Areas," p. 2, available at https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/19761209_strelow_ract.pdf (Strelow Memo), and 44 FR 53761, at 53762, footnote 2 (September 17, 1979).

year since the RACT emissions rates are technologically and economically feasible year-round. To the degree that the EPA analyses underlying the RACT emissions limits here rely on past performance data, those calculations typically use ozone season data. This is because ozone season data generally represent the time period over which the NO_x emissions rate performance of these units is the best. Put another way, the ozone season data for the facilities subject to these limits are a reliable indicator of what is technologically and economically feasible for these facilities, and EPA has no reason to believe that achieving the same performance outside the ozone season would be technologically or economically infeasible. As explained further in the next section, no commenters presented compelling evidence to change EPA's conclusion on this point.

The EPA proposed to develop the FIP limits using a weighted rate approach, and is retaining that overall approach here. EPA received significant comments both for and against such an approach, which are discussed in detail in the next section. Overall, upon consideration of these comments, the EPA's judgment is that this approach is still the best approach for addressing the Court decision and addressing SCR operation during EGU cycling (the operation of EGUs turning on and off or operating at varying loads levels based on electric demand). As we discussed extensively at proposal, the cycling of units, combined with the role of flue gas temperature in SCR performance, prompted EPA to consider how best to establish RACT limits that address the Third Circuit's concerns about allowing less stringent limits when flue gas temperatures went below what it considered to be an arbitrary temperature threshold. This is a challenging factor to consider in cases when the operating temperature varies, and when the units spend some time at temperatures where SCR is very effective, and some time at temperatures where it is not.

At proposal, EPA provided an assessment of whether the units in this FIP exhibit a pattern of cycling between temperatures where SCR is effective and where it is not. EPA evaluated years of data submitted by these sources to EPA to characterize their variability in

hours of operation or level of operation.³ In particular, EPA used this information to identify whether, or to what degree, the EGUs have shifted from being “baseload” units (*i.e.*, a steady-state heat input rate generally within SCR optimal temperature range) to “cycling” units (*i.e.*, variable heat input rates, possibly including periods below the SCR optimal temperature range). All of these EGUs were designed and built as baseload units, meaning the boilers were designed to be operated at levels of heat input near their design capacity 24 hours per day, seven days per week, for much of the year. As a result, the SCRs installed in the early 2000s were designed and built to work in tandem with a baseload boiler.⁴ In particular, the SCR catalyst and the reagent injection controls were designed for the consistently higher flue gas temperatures created by baseload boiler operation. In more recent years, for multiple reasons, these old, coal-fired baseload units have struggled to remain competitive when bidding into the PJM Interconnection (PJM) electricity market.⁵ Nationally, total electric generation has generally remained consistent, but between 2010 and 2020, generation at coal-fired utilities has declined by 68%.⁶ As a result, many of these units more recently have tended to cycle between high heat inputs, when electricity demand is high, and lower heat inputs or complete shutdowns, when demand is low, sometimes on a daily basis. This cycling behavior can affect the ability of the EGUs to operate their SCRs because at lower heat inputs the temperature of the flue gas can drop below the operating temperature for which the SCR was designed.⁷ Nothing in the comments undermined EPA’s basic conclusion that this cycling pattern is occurring. Accordingly, the final rule establishes limits that account for the technical limits on SCR operation that can result from this cycling behavior.

³ See the Excel spreadsheet entitled “PA-MD-DE SCR unit data 2002-2020.xlsx” in the docket for this action.

⁴ This point is not applicable to the Conemaugh facility where SCR was installed much later than other facilities at issue in this rule. According to Key-Con’s comment letter, “KEY-CON Management understood that compliance with the near-future MATS Rule and PADEP RACT II Rule would preclude unit operations that bypassed the SCRs at both stations.” See Key-Con comments at 10.

⁵ PJM is a regional transmission organization (RTO) or grid operator which provides wholesale electricity throughout 13 states and the District of Columbia.

⁶ U.S. Energy Information Administration, “Electric Power Annual 2020,” Table 3.1.A. Net Generation by Energy Source, <https://www.eia.gov/electricity/annual/>

⁷ U.S. EPA, “EPA Alternative Control Techniques Document for NO_x Emissions from Utility Boilers” EPA-453/R-94-023, March 1994, p. 5-119, <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=2000INPN.txt>

In the proposal, we also noted that in RACT II, PADEP attempted to address this cycling behavior by creating tiered emissions limits for different modes of operation based on the flue gas temperature, which its RACT II rule expressed as a transition from the 0.12 pounds of NO_x per million British thermal units (lb/MMBtu) rate to much less stringent rates (between 0.35 and 0.4 lb/MMBtu, depending on the type of boiler) based on a temperature cutoff of 600 degrees, with the less stringent rate essentially representing a “SCR-off” mode (*i.e.*, an emission limit applicable at times when the SCR has been idled or bypassed and is not actively removing NO_x). The Third Circuit rejected this approach because the selection of the cutoff temperature was not sufficiently supported by the record. The Third Circuit decision also questioned the need for the less stringent rates, noting that nearby states do not have different emission rates based on inlet temperatures. EPA considered the Court’s concerns as well as input received during the public comment period expressing both support for, and opposition to, a tiered limit. We also considered the practical and policy implications in structuring a tiered limit for these cycling EGUs based on operating temperature. EPA has decided to retain the proposed weighted approach instead of trying to develop a tiered limit. As noted at proposal, the effectiveness of SCR does not drop to zero at a single temperature point and defining the minimum reasonable temperature range to begin reducing SCR operation for the purposes of creating an enforceable RACT limit is a highly technical, unit-specific determination that depends on several varying factors.⁸ We noted the complexity and detailed information necessary to produce a justified and enforceable tiered limit that represents RACT and addresses the Court’s concerns about the basis and enforceability of the tiers, and as explained further in the next section, none of the comments, including those supporting the tiered limit, provided sufficient basis for EPA to change its approach.

In the proposal, EPA expressed an additional concern about addressing cycling operation

⁸ See Chapter 2, subsection 2.2.2 of the SCR Cost Manual, 7th Edition, available at https://www.epa.gov/sites/default/files/2017-12/documents/scrcostmanualchapter7thedition_2016revisions2017.pdf

through a tiered RACT limit based on operating temperature, which is that it would create an incentive for a source to cycle to temperatures where SCR is not required, in order to avoid SCR operating costs and potentially gain a competitive advantage. In the case of the Pennsylvania limits addressed by the Third Circuit's decision, there was no limit on how much time the units could spend in SCR-off mode. In section C of the TSD for the proposed action,⁹ EPA shows that over the last decade, some affected sources have varied the gross load level to which they cycle down, hovering either just above or just below the threshold at which the SCR can likely operate effectively. Depending on the unit, this slight change in electricity output could significantly affect SCR operation and the resulting emissions output. Though instances of cycling below SCR thresholds occurred in some cases prior to the implementation of Pennsylvania's tiered RACT limit and thus the limit may not be the sole driver of the behavior following its implementation, the tiered limit certainly allows this behavior to occur. While EPA acknowledges the need for EGUs to operate at times in modes where SCR cannot operate, EPA believes its RACT limit should minimize incentives to do that, and a tiered rate structure that effectively has no limit on SCR-off operation tends to do the opposite. We received significant comments on this concern, which are addressed in the response to comments section. EPA remains concerned about essentially unlimited SCR-off operation, and continues to believe that this is a key reason to retain the weighted rate approach over a tiered approach.

On the other hand, EPA also expressed concerns in the proposal about a RACT limit that treats these EGUs as always operating as baseload units by imposing a NO_x emission rate that applies at all times but can technically be achieved only if the boiler is operating at high loads. Recent data indicate that these units are not operating as baseload units and are not likely to do so in the future.¹⁰ Selecting the best baseload rate (the rate reflecting SCR operation in the optimal temperature range) and applying that rate at all times does not account for, and could

⁹ EPA is not revising the TSD. Any new technical analysis will be discussed directly in section III (EPA's Response to Comments) of this preamble.

¹⁰ See section C of the TSD for the proposed action.

essentially prohibit, some cycling operation of these units. Cycling has become more common at coal-fired EGUs because they are increasingly outcompeted for baseload power. In the past, these units were among the cheapest sources of electricity and would often run close to maximum capacity. Other EGUs can now generate electricity at lower costs than the coal-fired units.¹¹ Thus, the coal-fired units now cycle to lower loads during hours with relatively low system demand (often overnight and especially during the spring and fall “shoulder” seasons when space heating and cooling demand is minimized) when their power is more expensive than the marginal supply to meet lower load levels. Hence, they cycle up and down as load- and demand-driven power prices rise and fall, and they operate when the price meets or exceeds their cost to supply power. EPA acknowledges that cycling down to a SCR-off mode may sometimes happen, for example, when electricity demand drops unexpectedly, and other units provide the power at a lower cost. The consideration of the technical and economic feasibility of a given RACT limit should reflect, to the extent possible, consideration of the past, current, and future expected operating environment of a given unit. In electing to finalize its weighted rate approach, EPA considered these feasibility issues to establish a rate for each unit that reflects a reasonable level of load-following (cycling) (*e.g.*, a level consistent with similar SCR-equipped units) but that also accounts for the lower historic NO_x rates that these units have achieved. While the comments generally affirmed that a weighted rate could be structured to address cycling, we did receive comments on the appropriate considerations in choosing the final rates, which are responded to later in this notice.

B. Weighted Rates

As discussed in the NPRM, in order to address the concerns discussed previously in this section about how to determine RACT for EGUs that cycle, EPA proposed to express the RACT NO_x limits for these units using a weighted rate limit. The weighted rate incorporates both a

¹¹ The decreasing competitiveness of Pennsylvania’s coal units is illustrated by the fact that their share of the state’s total generation has declined from about 60% in 2001 to roughly 10% in 2021. See Energy Information Administration. Form EIA-923, Power Plant Operations Report (2001-2021).

lower “SCR-on” limit and a higher “SCR-off” limit. Through assignment of weights to these two limits based on the proportion of operation in SCR-on and SCR-off modes during a historical period that encompasses the range of recent operation, the SCR-on and SCR-off limits are combined into a single RACT limit that applies at all times. The weight given to the proposed SCR-off limit (established as described later in this section) has the effect of limiting the portion of time a cycling source can operate in SCR-off mode and incentivizes a source to shift to SCR-on mode to preserve headroom under the limit. While driving SCR operation, the weighted limit accommodates the need for an EGU to occasionally cycle down to loads below which the SCR can operate effectively and does not prohibit SCR-off operation or dictate specific times when it must not occur. In this way, this approach avoids the difficulty of precisely establishing the minimum temperature point at which the SCR-off mode is triggered, effectively acknowledging the more gradual nature of the transition between modes where SCR is or is not effective. Finally, it is readily enforceable through existing Continuous Emission Monitoring Systems (CEMS), without the need for development of recordkeeping for additional parameters that define the SCR-off mode. The approach is described in more detail below.

As a starting point for developing the proposed weighted rates for each unit, EPA examined data related to the threshold at which these facilities can effectively operate their SCR. Then, EPA calculated both SCR-on and SCR-off rates using historic ozone season operating data for the unit to determine when the SCR was likely running and when it was likely not running, and then established rates based again on historic operating data that represent the lowest emission limit that the source is capable of meeting when the SCR is running and when it is not. EPA did this by using the estimated minimum SCR operation threshold as described in the proposed action, and then calculating average SCR-on and SCR-off rates for each unit based on historic ozone season operating data for that unit, when available, from 2003 to 2021. For more detail on the development of the proposed rates, see section D of the TSD for the proposed action. In particular, section D.1 addresses the proposed threshold analysis. The SCR-on rate is

an average of all hours in which the SCR was likely running (operating above the threshold at which it can run the SCR with an hourly NO_x emission rate below 0.2 lb/MMBtu) during each unit's third-best ozone season from the period 2003 to 2021. The third-best ozone season was identified based on the unit's overall average NO_x emission rate during each ozone season from 2003 to 2021. This time period captures all years of SCR operation for each facility, though Conemaugh only installed SCR in late 2014. EPA included all these years of data in developing the proposed as well as the final limits because the Agency did not identify, and commenters did not provide, a compelling reason to exclude any of the years. This is in line with the Third Circuit's decision, which questioned EPA's review of only certain years of emissions data for these sources in determining whether to approve Pennsylvania's RACT II NO_x emission rate for these EGUs. The use of the third-best year accounts for degradation of control equipment over time, and it avoids biasing the limit with uncharacteristically low emitting days, or under uncharacteristically optimal operating conditions. EPA similarly used a third-best ozone season approach for the Revised CSAPR Update (86 FR 23054, April 30, 2021) (RCU) and the proposed Good Neighbor Plan for the 2015 Ozone NAAQS (87 FR 20036, April 6, 2022) (Good Neighbor Plan). The "SCR-off" rate used to develop the proposal is an average of all hours in which the unit's SCR was likely not running (operating below the threshold at which it can run the SCR with an hourly NO_x rate above 0.2 lb/MMBtu) during all ozone seasons from 2003-2021 (except for Conemaugh). All ozone seasons in the time period were used in order to increase the sample size of this subset of the data, as an individual ozone season likely contains significantly fewer data points of non-SCR operation.

EPA then calculated the SCR-on and SCR-off "weights," which represent the amount of heat input spent above (SCR-on) or below (SCR-off) the SCR threshold, for each EGU. For the weights used at the proposal stage, EPA evaluated data from the 2011 to 2021 ozone seasons and selected the year in which the EGU had its third highest proportion of heat input spent above the SCR threshold during this time period, using that year's weight (the "third-best weight") together

with the SCR-on/SCR-off rates described previously to calculate the weighted rate. The years 2011-2021 were analyzed for purposes of the proposal because they likely are representative of the time period that encompasses the years when the units began to exhibit a greater cycling pattern, and it is reasonable to expect that this pattern will continue for the foreseeable future.

Using these data, EPA proposed emissions limitations based on the following equation:

$$(SCR\text{-}on\ weight * SCR\text{-}on\ mean\ rate) + (SCR\ off\ weight * SCR\ off\ mean\ rate) =$$

emissions limit in lb/MMBtu.

Using this equation, EPA proposed the NO_x emission limits listed in Table 1, based on a 30-day rolling average:

Table 1: Proposed NO_x Emission Rate Limits¹²

Facility Name	Unit	Low Range Rate (lb/MMBtu)	High Range Rate (lb/MMBtu)	Weighted Rate (lb/MMBtu)	Proposed Facility-wide 30-day Average Rate Limit (lb/MMBtu)
Cheswick	1	0.085	0.195	0.099	0.099
Conemaugh	1	0.071	0.132	0.091	0.091
Conemaugh	2	0.070	0.132	0.094	
Homer City	1	0.102	0.190	0.102	0.088
Homer City	2	0.088	0.126	0.088	
Homer City	3	0.096	0.136	0.097	
Keystone	1	0.046	0.170	0.076	0.074
Keystone	2	0.045	0.172	0.074	
Montour	1	0.047	0.131	0.069	0.069
Montour	2	0.048	0.145	0.070	

EPA solicited comment on the proposed facility-wide average rate limits, as well as the low and high range of potential limits. The limits are calculated as a 30-day rolling average, and apply at all times, including during operations when exhaust gas temperatures at the SCR inlet are too low for the SCR to operate, or operate optimally. For facilities with more than one unit, EPA proposed to allow facility-wide averaging for compliance, but proposed that the average limit be

¹² See 87 FR 31806 (May 25, 2022).

based on the weighted rate achieved by the best performing unit. A 30-day average “smooths” operational variability by averaging the current value with the prior values over a rolling 30-day period to determine compliance. While some period of lb/MMBtu values over the compliance rate can occur without triggering a violation, they must be offset by corresponding periods where the lb/MMBtu rate is lower than the compliance rate (*i.e.*, the 30-day rolling average rate). EPA is retaining its proposed overall approach to developing these limits, but for reasons discussed in Section III of this preamble, EPA is changing the way the rate calculation is done for facilities with more than one unit, and is making additional adjustments to the rate calculation in response to technical information received. These changes result in some changes to the final rates, which are discussed in section IV of this preamble.

C. Daily NO_x Mass Emission Rates

EPA also proposed a unit-specific daily NO_x mass emission limit (*i.e.*, lb/day) to complement the weighted facility-wide 30-day NO_x emission rate limit and further ensure RACT is applied continuously. High emissions days are a concern, given the 8-hour averaging time of the underlying 1997 and 2008 ozone NAAQS. The proposed daily NO_x mass emission limit was calculated by multiplying the proposed facility-wide 30-day rolling average NO_x emission limit (in lb/MMBtu) by each unit’s heat input maximum permitted rate capacity (in MMBtu/hr) by 24 hours. While the 30-day average rate limit ensures that SCR is operated where feasible while reasonably accounting for cycling, EPA is concerned that units meeting this limit might still occasionally have higher daily mass emissions on one or more days where no or limited SCR operation occurs, which could trigger exceedances of the ozone NAAQS if these high mass emissions occur on days conducive to ozone formation, such as especially hot summer days. EPA proposed a daily mass limit that would govern over a full 24-hr, calendar day basis as an additional constraint on SCR-off operation within a single day. The proposed limit was designed to provide for some boiler operation without using the SCR, which may be unavoidable during part of any given day, but also to constrain such operation because the mass limit will

necessitate SCR operation (for example by raising heat input to a level where the SCR can operate) if the unit is to continue to operate while remaining below this limit. This provides greater consistency with the RACT definition. Table 2 shows the unit-specific daily NO_x mass limits that were proposed in the NPRM.

Table 2: Proposed Daily NO_x Mass Limits¹³

Facility Name	Unit	Permitted Max Hourly Heat Input Rate (MMBtu/hr)¹⁴	Proposed Unit-Specific Mass Limit (lb/day)
Cheswick	1	6,000	14,256
Conemaugh	1	8,280	18,084
Conemaugh	2	8,280	18,084
Homer City	1	6,792	14,345
Homer City	2	6,792	14,345
Homer City	3	7,260	15,333
Keystone	1	8,717	15,481
Keystone	2	8,717	15,481
Montour	1	7,317	12,117
Montour	2	7,239	11,988

EPA solicited comment on the proposed daily mass limits. As discussed in more detail in section III of this preamble, EPA considered the comments received and made some changes to the final limits. The final limits are discussed in section IV of this preamble.

III. EPA's Response to Comments Received

EPA received 10 sets of comments on our May 25, 2022 proposed FIP. A summary of the comments and EPA's response is provided herein. All comments received are included in the docket for this action.

Comment: Allegheny County Health Department (ACHD) submitted a comment clarifying the operating status of the Cheswick Generating Station.

¹³ See 87 FR 31807 (May 25, 2022).

¹⁴ Title V Permit maximum heat input rates.

Response: EPA acknowledges the comment provided by ACHD. In our NPRM, EPA described Cheswick as being in the process of closing, despite ACHD having issued a title V permit modification that included a provision requiring Boiler #1 to cease operations on April 1, 2022. While that deadline had come and gone by the time the NPRM was published, it was not entirely clear at the time of drafting the notice that the closure was permanent and enforceable. ACHD's comment addressed EPA's characterization of Cheswick's status in the NPRM and affirmed that ACHD has verified that Cheswick's main boiler and associated equipment have been permanently shut down. In the intervening months since the NPRM, EPA has confirmed, with assistance from ACHD, that the boiler has in fact ceased operating, and that Cheswick's title V operating permit has been terminated. Therefore, EPA finds that the closure is permanent and enforceable, and as such, is not finalizing any RACT limits for Cheswick as proposed in our NPRM.

Comment: Commenters assert that EPA must take action on PADEP's May 26, 2022 and June 9, 2022 SIP submittals, which included Pennsylvania's own source specific RACT determinations, and which were intended to address the deficiencies identified by the Third Circuit, prior to (or concurrently with) promulgating a FIP.

Response: Although EPA generally pursues a "state first" approach to air quality management, giving deference to states to determine the best strategy for addressing air quality concerns within their boundaries in the first instance, EPA does not agree with the commenters' assertion that EPA must act on PADEP's RACT SIP submittals prior to or concurrently with finalizing a FIP. On September 15, 2021, EPA proposed to disapprove those portions of Pennsylvania's May 16, 2016 SIP upon which EPA's prior approval had been vacated and remanded by the Third Circuit, and that are encompassed in this FIP action. 86 FR 51315. EPA recently finalized that disapproval. 87 FR 50257. CAA section 110(c)(1)(B) requires the Administrator to "promulgate a Federal implementation plan *at any time* within 2 years after the Administrator disapproves a State implementation plan submission in whole or in part, unless the

State corrects the deficiency *and the Administrator approves* the plan or plan revision, before the Administrator promulgates such Federal implementation plan” (emphasis added). Following EPA’s August 16, 2022 (87 FR 50257) final disapproval, EPA has authority to promulgate a FIP under CAA section 110(c) at any time because EPA has not approved a plan or plan revision from Pennsylvania correcting the deficiency. Nothing in the Clean Air Act requires EPA to act upon a SIP submitted by a state to address a deficiency identified in EPA’s final disapproval prior to promulgating a FIP, and the commenters have not provided any statutory basis for such a position.

As explained in the NPRM for this action, EPA may promulgate a FIP contemporaneously with or immediately following the predicate final disapproval action on a SIP (or finding that no SIP was submitted). *EPA v. EME Homer City Generation, L.P.*, 572 U.S. 489, 509 (2014) (“EPA is not obliged to wait two years or postpone its action even a single day: The Act empowers the Agency to promulgate a FIP ‘at any time’ within the two-year limit”) (internal citations omitted). In order to provide for this, it cannot be true that EPA must take further action on SIP submittals from the state prior to undertaking rulemaking for a FIP. The practical effect of applying the procedure commenters allege, that EPA must consider a new SIP submittal from the state prior to promulgating a FIP, would be that EPA would either approve the state’s new SIP revision (thereby nullifying the need for a FIP) or EPA would disapprove the state’s new SIP revision, which would essentially require a double disapproval from EPA in such circumstances. This cannot be understood to be Congress’s intent. When considering a similar question, the Federal Court of Appeals for the Tenth Circuit agreed with the interpretation EPA here states. Specifically, the Tenth Circuit stated: “The statute itself makes clear that the mere *filing* of a SIP by Oklahoma does not relieve the EPA of its duty. And the petitioners do not point to any language that requires the EPA to delay its promulgation of a FIP until it rules on a proposed SIP. As the EPA points out, such a rule would essentially nullify any time limits the EPA placed on states. States could forestall the promulgation of a FIP by submitting one

inadequate SIP after another.” *Oklahoma v. EPA*, 723 F.3d 1201, 1223 (10th Cir. 2013)

(emphasis in original).

EPA has not fully evaluated Pennsylvania’s May 26 and June 9, 2022 submittals and has not yet proposed action on the SIP submittals. As explained, this does not alter EPA’s authority to finalize this action promulgating a FIP. EPA intends to evaluate and take action on Pennsylvania’s submittal in accordance with the timelines established in CAA section 110(k)(2). However, as noted in the NPRM, EPA submitted extensive comments on the draft permits. In those comments, EPA raised several concerns that remain unresolved, including whether Pennsylvania’s continued use of tiered limits (*i.e.* separate limits for SCR-on and SCR-off operation) could be squared with the Court’s clear objection to our approval of such an approach in the past, and whether Pennsylvania’s record was adequate to support the limits selected, the need for separate limits, and how to determine when each limit applied.

Comment: Several commenters asserted that EPA erred in the selection of SCR as RACT. PADEP asserts that EPA’s proposal does not provide a source specific analysis of technological feasibility for each unit, and that it does not identify any specific control technology or technique as being technically feasible. They claim that EPA’s approach fails to comport with previous RACT approaches. Keystone/Conemaugh (Key-Con) suggests that EPA overlooked the technical and economic circumstances of the individual sources in determining RACT. Additionally, one commenter, Talen Energy, alleged that EPA should have selected feasible controls that “represent RACT for each mode of operation of the units, such as startup and shutdown.”

Response: EPA disagrees with those comments suggesting that EPA’s FIP proposal did not follow the long-standing definition of RACT. Courts have repeatedly concluded that the term “reasonably available” is ambiguous and therefore the statute does not specify which emission controls must be considered “reasonably available.” *See, e.g., Natural Resources Defense Council v. EPA*, 571 F.3d 1245, 1252 (D.C. Cir. 2009) (stating “the term ‘reasonably available’ within RACT is also ambiguous” and “[g]iven this ambiguity, the EPA has discretion reasonably

to define the controls that will demonstrate compliance”). *See also, Sierra Club v. EPA*, 294 F.3d 155, 162-63 (D.C. Cir. 2002) (finding that the term “reasonably available” in the analogous “reasonably available control measure” is ambiguous and “clearly bespeaks [the Congress’s] intention that the EPA exercise discretion in determining which control measures must be implemented”). As stated in the proposal, EPA’s longstanding interpretation is that RACT is defined as “the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.”¹⁵ Commenters correctly note that EPA has further explained that “RACT for a particular source is determined on a case-by-case basis, considering the technological and economic circumstances of the individual source.”¹⁶

EPA’s action is in line with this longstanding guidance and other Agency actions concerning RACT under section 182 of the Clean Air Act. For each source, the EPA first selected a control technology that is reasonably available, considering technical and economic feasibility, and then identified the lowest emissions limitation that, in EPA’s judgment, the particular source is capable of meeting by application of the technology (*i.e.*, that a plant operator applying the selected technology is capable of achieving economically and technologically). With respect to the first step, for this set of sources EPA selected SCR as the control technology that is reasonably available. For each of the sources addressed in this final rule, SCR has already been installed and each SCR has a clearly demonstrated operating history. Most of the sources installed these SCRs in the early 2000s, with the exception being Conemaugh, which only installed SCR in 2014. These facts alone prove that SCR is a control technology that is reasonably available for these sources. In the prior EPA-approved PADEP SIP revision, SCR was selected as the control technology and that selection was not disputed in comments on the

¹⁵ Memo, dated December 9, 1976, from Roger Strelow, Assistant Administrator for Air and Waste Management, to Regional Administrators, “Guidance for Determining Acceptability of SIP Regulations in Non-Attainment Areas,” p. 2, available at https://www3.epa.gov/ttn/naaqs/aqmguid/collection/cp2/19761209_strelow_ract.pdf and 44 FR 53762, footnote 2 (September 17, 1979) (Strelow Memo). *See also Sierra Club v. EPA*, 972 F.3d 290.

¹⁶ *Id.*

action or in the subsequent litigation, to which this FIP is a response. Additionally, no one raised concerns about whether SCR was the appropriate control technology when EPA initially proposed approval of PADEP's RACT regulations, nor did anyone raise such concerns at the State level when PADEP undertook notice and comment rulemaking in order to adopt the regulation in the first place. To the extent that the commenters are challenging EPA's judgment in choosing the emission limit that each source is "capable of meeting," those comments are addressed later in this section. However, if the commenters are asserting that EPA has selected a technology that is not "reasonably available considering technological and economic feasibility," the EPA disagrees based on the fact that SCRs are present and operating at each of these sources.

Regarding the comment that EPA should select RACT limits for each mode of operation of the SCR, including startup and shutdown, the proposed FIP accounts for this. Given that these sources already have installed and operational SCRs, EPA determined it was appropriate to consider modes of operation, as applicable, during the selection of the emission limitation, rather than during the control technology selection. Indeed, EPA's proposed statistical approach to develop the rates is intended to select emissions limits that reasonably account for different modes, including consideration of modes where the selected RACT cannot be operated. As discussed in a comment response later in this document, EPA considered whether it was appropriate to create a tiered limit approach that also accounted for different modes in the different tiers, but as explained here and in the proposal, were EPA to define a mode where the chosen RACT technology need not operate but also fail to provide constraints on the use of that mode, that would essentially create an exemption from operating RACT when the source is clearly capable of meeting a lower rate, and would thereby create a regulatory incentive to operate at loads where the SCR is not in operation.

Comment: PADEP claims that it is inconsistent with RACT to use a statistical approach for the selection of emissions limits. Key-Con similarly claims that routine data are insufficient for a RACT analysis.

Response: As an initial matter, EPA affirms that a statistical approach is a valid way to select the lowest emissions limit that the source is capable of meeting through application of SCR. As explained in the response to the prior comment, once a technology is selected that is “reasonably available considering technological and economic feasibility,” the second step is selection of the emission limit that a plant operator applying the selected technology is economically and technologically capable of achieving. In order to select the emission limitation, EPA did an extensive statistical analysis of emissions data from the affected facilities. The rationale underlying that approach is outlined in significant detail in our proposal.

EPA does not always have the benefit of a robust historic data set that reflects actual operation of the selected control technology to consider in selecting emission limits for purposes of establishing RACT. When, as is the case here, we do have such data, it is reasonable to use them. The proposal acknowledged several factors that affect the degree to which the historic data set represents the lowest rate that the source is capable of meeting and explains the adjustments EPA made to its proposed emissions limits to account for those factors. There are specific comments that take issue with certain choices EPA made in applying the statistical approach, which EPA addresses later in this notice, but nothing in the CAA or EPA rules or guidance precludes EPA from using a statistical approach as it has done here.

Comment: PADEP takes issue with EPA’s decision to not do a technical and economic feasibility analysis for other potential NO_x control technologies at these sources, such as installation of newer low-NO_x burners that achieve greater NO_x reductions during the combustion process. Key-Con provided similar comments, asserting that our failure to analyze each of these other potential NO_x control technologies for their economic and technological feasibility was not in keeping with RACT. These commenters took issue with EPA’s presumption “that the facilities have the flexibility to change their operations to emit less NO_x per unit of heat input.”

Response: The statements discussing other potential NO_x control technologies that could

be adopted, but that EPA was not requiring, were provided as additional information, and as noted in the proposal, “EPA did not evaluate these technologies in the context of our RACT analysis.” Commenters appear to assume that EPA expressly accounted for installation or increased use of these technologies when determining limits that each source is capable of meeting. To the contrary, this discussion was intended to clarify that these other control techniques were not accounted for in EPA’s development of each source’s limits; neither the rates nor the weights were adjusted to require more use of these other control technologies. To the degree that a source was using such other control technologies during the period used in selecting the RACT limits, EPA’s approach for developing the limits assumed that the sources continued to operate these other technologies without any change.

Also, although PADEP did an analysis of other NO_x control technologies available to each source when setting the limits in the permits, PADEP rejected all of these other control technologies except boiler tuning, either for technical feasibility or cost reasons, in setting the limits. This rejection of most of the other control technologies as RACT by PADEP essentially aligns with our own selection of SCR as RACT.

Comment: Homer City objects to applying the RACT limit from the lowest emitting of the three sources at the facility as a facility-wide RACT NO_x limit. Homer City asserts that the definition of RACT, *i.e.* “...the lowest emission limit that a *particular source* [emphasis added] is capable of meeting...” requires that EPA establish FIP limits on a unit by unit basis, rather than by a facility wide average.

Response: Longstanding EPA policies have allowed for averaging to meet RACT limits, including averaging across multiple emissions units. The 1992 NO_x supplement to the general preamble¹⁷ states that it is appropriate for RACT to allow emissions averaging across facilities within a nonattainment area (or Ozone Transport Region (OTR) state, as is the case here). In practice EPA has allowed averaging across units on a facility-wide basis, and even across

¹⁷ 57 FR 55620, November 25, 1992

facilities in the same system under common control of the same owner/operator, including its approval of PADEP's prior EGU RACT rules.¹⁸ EPA's implementation rule for the 2008 ozone NAAQS allows nonattainment areas to satisfy the NO_x RACT requirement by using averaged area-wide emissions reductions.¹⁹ EPA reasonably allows averaging for compliance, so long as the underlying rates used as the basis for the average meet the definition of RACT. The comments do not provide a basis for EPA to reject its longstanding emissions averaging policies. To the contrary, these policies provide additional flexibility for sources to manage their SCR operation across units to ensure compliance with the limits.

Regarding the comments on EPA's proposal to base the facility-wide average rate on the best performing unit, the EPA is finalizing a minor change. In light of the unit-specific nature of EPA's weighted rate analysis, the EPA expects that the unit-specific rates already represent RACT for each unit, and that the most appropriate basis for a facility-wide average would be the weighted rates for each of the units at the facility. While some commenters felt that EPA should use the lowest single unit rate to drive facilities to use their best performing units most often, we expect that the stringent unit-specific rates, when averaged together, will still provide sufficient incentive to use the best performing units most often. See section IV of the notice for additional information.

Comment: Key-Con notes that only one of the designated nonattainment areas in Pennsylvania is currently violating the 2015 ozone NAAQS, and expresses concern that EPA appears to have inappropriately considered the potential for lower ozone levels in many areas in setting RACT, and states that the requirement for NO_x RACT is simply tied to Pennsylvania's

¹⁸ See 25 Pa Code §§129.94 and 129.98, which allow sources which cannot meet a presumptive RACT limit to average with lower emitting sources, provided that aggregate emissions do not exceed what would have been allowed under the presumptive limits.

¹⁹ 80 FR at 12278-79 ("states may demonstrate as part of their NO_x RACT SIP submittal that the weighted average NO_x emission rate from all sources in the nonattainment area subject to RACT meets NO_x RACT requirements"). This portion of the 2008 ozone SIP requirements rule was challenged, with petitioners arguing that such a rule violated the Clean Air Act because the statute at § 182(b)(2) requires each individual source to meet the NO_x RACT requirement. The D.C. Circuit rejected this argument, finding that the Clean Air Act "does not specify that 'each one of' the individual sources within the category of 'all' 'major sources' must implement RACT." *South Coast Air Quality Mgmt Dist. V. EPA*, 882 F.3d 1138, 1154 (D.C. Cir. 2018).

inclusion in the OTR. Key-Con also asserts that it is more appropriate to use interstate transport rules, not RACT, to address concerns about states' obligations to eliminate significant contribution to nonattainment, or interference with maintenance of NAAQS in other states.

Response: The EPA agrees with the commenter's characterization that Pennsylvania must implement RACT level controls statewide due to the state's inclusion in the OTR, in accordance with CAA § 184. The statutory direction to require "implementation of reasonably available control technology" in states included in an ozone transport region, CAA §§ 182(f), 184(b), is the same in substance as the requirement for ozone nonattainment areas for "implementation of reasonably available control technology," CAA § 182(b)(2). Therefore, EPA's analytical method to determine what level of control technology is reasonably available does not differ based on whether RACT is being implemented in an ozone nonattainment area or the OTR.

There are also areas of Pennsylvania that are still designated nonattainment for both prior and current ozone NAAQS. EPA notes that the implication of the commenter's statement, that an area's factual attainment of an ozone NAAQS, as perhaps shown by a Clean Data Determination, would have implications for whether that area needs to implement RACT, is incorrect. An area designated nonattainment must continue to meet the statutory requirement to implement RACT, if otherwise applicable, until the area is redesignated to attainment or unclassifiable under section 107(d)(3) of the CAA. While the EPA did identify improved air quality in many areas, including remaining ozone nonattainment areas, some of which are in other states, as a benefit of the FIP emissions limits, we did not determine RACT through the selection of control technology and identification of emission limitations that the sources are capable of meeting based on the air quality impact in any particular area(s). In other words, air quality improvement in nonattainment areas in Pennsylvania or other states was not a criterion in determining RACT in this action.

Comment: Several commenters claim that EPA's economic feasibility analysis for SCR optimization was flawed. First, commenters assert that the economic analysis was flawed

because it only considered the costs of additional reagent, and ignored considerable capital costs such as increased catalyst maintenance and replacement, and modifications to ancillary equipment. Second, commenters assert that the actual \$/ton NO_x costs far exceed what EPA's analysis claims, and are more likely in the \$150,000-200,000/ton range. Additionally, commenters assert that EPA's analysis of reagent injection incorrectly assumes that reagent costs will return to historic, lower prices.

Response: EPA disagrees. First, commenters are incorrect in the assertion that EPA did not consider capital costs, such as catalyst maintenance and replacement. As discussed in the NPRM and TSD, EPA relied on certain data from the recent evaluation of variable operating and maintenance (VOM) costs (which include increased catalyst maintenance and replacement costs), associated with increased use of SCRs at EGUs used in a number of national rulemaking actions related to the CAA's interstate transport requirements, including most recently the proposed Good Neighbor Plan for the 2015 ozone NAAQS. In the "EGU NO_x Mitigation Strategies Proposed Rule TSD" (Good Neighbor Plan TSD) for the proposed Good Neighbor Plan (included in the docket for this action), EPA used the capital expenses and operation and maintenance costs for installing and fully operating emission controls based on the cost equations used within the Integrated Planning Model (IPM) that were researched by Sargent & Lundy, a nationally recognized architect/engineering firm with EGU sector expertise. See 87 FR 31808; TSD at 16-18. EPA's cost analysis for the proposed FIP only related to increased use, or optimization, of the SCRs, since each facility already had SCR installed. While that analysis was presented on a national, fleetwide basis, for this action EPA used site specific data in the "Retrofit Cost Analyzer"²⁰ to perform a bounding analysis to demonstrate that the cost assumptions made in the RCU and Good Neighbor Plan were still accurate and reasonable for the current RACT analysis. Using that methodology, EPA estimated a cost per ton for these sources that ranged from \$2,590 to \$2,757, depending on the unit. As previously stated, these

²⁰ See TSD for proposed FIP at 16-18.

estimates did include capital costs associated with increased catalyst maintenance and replacement. Reagent costs have actually dropped since the May 25, 2022 NPRM,²¹ and the cost per ton of NOx removed is still well within a range that should be considered economically feasible.

In Table 4 of the TSD for the proposed FIP, EPA calculated the potential change in NOx mass emissions, based on the proposed 30-day average NOx emission limits.²² Then, in Table 5 of the proposed TSD, EPA calculated the cost per ton of NOx removed based on the additional amount of reagent needed to meet to those limits.²³ EPA has made slight adjustments in finalizing the emission limits after considering comments. Detailed discussion of the rationale for and of the limits themselves can be found elsewhere, but particularly in section IV of this preamble. Table 3 of this preamble shows the reductions these limits will realize when compared to 2021 emissions data.

Table 3: 2021 Annual NOx Emissions and Rates Compared to FIP Rates

Facility	2021 Average NOx Rate (lb/MMBtu)	30-Day NOx Rate (lb/MMBtu)	30-Day NOx Rate vs. 2021 Average	2021 NOx Emissions (tons)	Potential Change in NOx Mass Emissions (tons)	
Conemaugh	0.149	0.072	-52%	5,506	-2,837	
Homer City	0.133	0.096	-28%	3,144	-871	
Keystone	0.142	0.075	-47%	5,481	-2,579	
Montour	0.110	0.102	-7%	649	-46	
Net:				14,781	-6,333	-43%

Based on the revised limits, and an updated cost of reagent, EPA calculated the cost per ton of NOx removed for the final limits:

Table 4: Cost per NOx (\$/ton) Removed Based on Additional Reagent

²¹ Reagent prices have decreased since publication of the NPRM, from an average of \$1515/ton anhydrous ammonia to slightly less than \$1400/ton. See appendix 3 of the TSD for this action, and https://mymarketnews.ams.usda.gov/filerepo/sites/default/files/3195/2022-07-28/614317/ams_3195_00065.pdf.

²² See *Id.* at 15

²³ See *Id.* at 19.

Facility	Predicted Reduction (tons NOx per year from 2021 baseline)	Additional Reagent (tons per year from 2021 baseline)*	Total Annual Cost for additional reagent^	Cost per ton of NOx removed for additional reagent (\$/ton)^+
Conemaugh	2,837	1,617	\$2,263,800	\$798
Homer City	871	496	\$694,400	\$797
Keystone	2,579	1,470	\$2,058,000	\$798
Montour	46	26	\$36,400	\$791
Average cost/ton				\$796

* Additional reagent = predicted reduction (tons) x 0.57 tons reagent/ton NOx reduction

^ Total cost = additional reagent x \$1400/ton reagent

+ Cost per ton = total cost/predicted reduction

With respect to the assertion by commenters that the \$/ton value is actually in the \$150,000-\$200,000/ton of NOx removed range, commenters have not supplied adequate data or analysis to substantiate that assertion. Commenters (in this case, Montour) merely assert that in order to meet the proposed limits, the units will need to run for extended periods of time following a startup, even when electricity is not being sold to the grid, in order to achieve a certain number of hours of low hourly NOx emissions rates to offset the higher hourly NOx emission rates during startup, or else the source will not meet the proposed emission limits in the FIP. Montour claims that it has more frequent start-ups and shut-downs during which it cannot operate the SCRs. EPA notes that the comment did not provide any analysis of potential alternate methods of compliant operation, and merely submitted data relating to the extra cost of fuel oil during the period of time they assert they will be required to run. For example, it may be possible for the units to ramp up more quickly following startup so as to spend less time in SCR-off mode. Additionally, it may be possible for the units to spend more time “hovering” at a higher heat input (*i.e.* SCR-on) in anticipation of a need for quick dispatch. EPA acknowledges that the limits in the FIP may result in the sources’ needing to re-evaluate how they operate their EGUs in order to meet the new RACT limit, which may require adjusting the prices and certain operating parameters they specify to PJM when bidding into the market. However, EPA views these as free-market considerations, rather than an appropriate component of a RACT

determination. EPA has long held that “[e]conomic feasibility rests very little on the ability of a particular source to ‘afford’ to reduce emissions to the level of similar sources. Less efficient sources would be rewarded by having to bear lower emission reduction costs if affordability were given high consideration. Rather, economic feasibility ... is largely determined by evidence that other sources in a source category have in fact applied the control technology in question.”²⁴

EPA continues to believe that optimization of the SCRs to achieve the NO_x emission limits in this FIP is economically feasible. Nothing submitted in the comments provided adequate justification or data to make a determination to the contrary. Indeed, evidence from the units’ operating history supports EPA’s view that when it is economically advantageous to do so, these units have no trouble meeting lower limits. Some of the lowest NO_x emissions EPA observed coincided with high NO_x allowance prices associated with the NO_x SIP call which went into effect in 2003.²⁵ Additionally, data for some of these units from May through June of the 2022 ozone season generally indicate SCR operating patterns (and, as a result, NO_x emissions) that match or are among their best in the recent data record. EPA believes this is due, at least in part, to the market prices of NO_x allowances needed for compliance with the RCU during this period, which were reported to range between \$20,000 and \$40,000 per ton.²⁶

Comment: Commenters assert that EPA ignored equipment failure issues and failed to consider the deleterious effects on both control equipment and on the environment (ammonia slip, decreased mercury removal) of excess ammonia injection, particularly when operating below the catalysts’ minimum effective temperature range. Commenters further assert that EPA failed to consider an engineering analysis submitted by Key-Con that PADEP relied upon in developing their case-by-case limit for Key-Con.

²⁴ E.P.A., State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; Supplemental, 57 Fed. Reg. 18,070, 18,073 (proposed April 28, 1992) (first introducing RACT as a standard to regulate emissions from existing sources)

²⁵ Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone (NO_x SIP Call), 63 FR 57356 (October 27, 1998) (codified in relevant part at 40 CFR 51.121 and 51.122)

²⁶ See S&P Global Capital IQ, [capitaliq.spglobal.com](https://www.spglobal.com/capitaliq) (subscription required).

Response: EPA disagrees. First, EPA did not presume that the proposed FIP limits would be met by simply injecting more reagent during sub-optimal SCR operating conditions, and the FIP does not require it. EPA continues to recognize that the NO_x reduction capabilities of the SCRs are flue gas temperature dependent, and that the NO_x removal efficiency curve decreases with flue gas temperature until a point is reached where the SCR offers little or no NO_x control above what is achieved by the low NO_x burners (LNB) and overfire air (OFA) that are also installed on all of the units subject to this FIP. We also recognize that catalyst fouling, catalyst poisoning, ammonia slip and damage to downstream equipment are all potential outcomes of excessive reagent injection or injection during low temperature conditions. We further recognize that there have been changes in the electricity market in more recent years that result in greater periods of time when the units are operating in SCR-off mode. EPA believes that because the calculation of the limits uses actual past performance data from the sources, which include times at low heat input and therefore time with the SCR off, sources can meet these limits without injecting excessive amounts of ammonia during unfavorable SCR operating conditions. Additionally, using the third-best weight means that the SCR-off weight is based on a recent year that is not the extreme SCR-on case in the last decade and thus provides additional buffer.

The data show that during times when boilers are operating at high heat inputs and therefore SCRs are at optimum performance temperatures, sources have shown that they are capable of achieving limits in the 0.05 to 0.07 lb/MMBtu range, so they could achieve additional reductions during times when the SCR can be optimized to offset higher emissions during times when the SCR may not be optimized, so as to meet their 30-day rolling average and daily mass limit.

Also, EPA did review and consider the Key-Con engineering report referenced by the commenters. The information presented in that report appears to have been submitted to Pennsylvania to contest condition E.009 in PADEP's draft case-by-case RACT permit for Keystone, which would have required Keystone to set the SCR controllers at a target NO_x

emission rate of 0.06 lb/MMBtu.²⁷ According to Attachment 3 of Key-Con’s comment letter, they additionally evaluated operational data from 2019, which they claim is the last year of typical operations.²⁸ The report evaluated ammonia injection rates, and purported to show that due to ammonia slip and fouling of downstream appurtenances, the SCR could not and should not operate at a set-point of 0.06 lb NOx/MMBtu. The report then determined that “a NOx rate of 0.09 lb/MMBtu is tolerable and will not require air heater washes nearly as frequently as 0.08 lb/MMBtu²⁹ or less would.” See page 10 of Appendix 3 to Key-Con’s July 11, 2022 comment letter. The report also states that Key-Con conducted testing on Conemaugh unit 1 during 18 days in May 2017 to determine if continuous operation at a NOx setpoint of 0.04 lb/MMBtu was sustainable. The report claimed that it was not, because emissions of mercury spiked to a point where it appeared that Unit 1 would exceed its Mercury Air Toxics Standard (MATS) limit, and the NOx setpoint had to be increased to 0.07 lb/MMBtu to lower mercury emissions. A similar test was conducted on Conemaugh Unit 2 towards the end of the 2017 ozone season to determine if the 0.05 lb/MMBtu setpoint was sustainable, and the report claims that after 25 days at the 0.05 setpoint, mercury emissions increased abruptly and nearly exceeded the MATS limit, so the NOx setpoint had to be “relaxed” an unspecified amount to decrease mercury emissions. P. 7 of Attachment 3.

In response to the report, EPA notes that unlike Pennsylvania’s proposed RACT permit terms, EPA is not requiring that the sources operate their SCRs at a certain set point below the 30-day rolling daily average NOx rate limit, so the validity and relevance of this testing to EPA’s proposed limits is questionable. EPA is expecting that the operators of Keystone and Conemaugh will operate their SCRs in a way that balances concerns about catalyst and preheater fouling and mercury emissions with the emission rates set by EPA - rates which are based on operating data

²⁷ Per condition E.10 of the draft permit for Conemaugh, their target was 0.05 lb NOx/MMBtu

²⁸ Commenters assert that 2020 and 2021 were excluded due to low electricity demand and lack of coal supply, respectively.

²⁹ PADEP’s proposed RACT limit.

from these sources indicating achievement of these emission rates in the past, including the recent past. Also, we note that EPA's pounds of NOx per MMBtu of heat input emission rate limit is a 30-day rolling daily average emission rate limit, whereas its daily limit is a mass limit. In contrast, Pennsylvania's RACT permit had a daily (24 hour) average NOx emissions rate, so EPA's 30-day rolling average emission rate limit gives the source operators more flexibility in how they operate the SCRs. That is, the operators do not need to keep the setpoint for the SCRs at a very low level each day for an extended period of time, as they would to meet Pennsylvania's daily average NOx rate. The ability to average NOx hourly emission rates over 30 days allows the sources greater flexibility to vary NOx emission rates from their SCRs, raising NOx emission rates up or down in order to balance the various factors that must be taken into account, such as catalyst or preheater fouling and mercury emissions.

Finally, EPA notes that the commenter did not perform a "thorough review of EPA's NOx emissions analyses" because of EPA's alleged technical failures and failure to understand current and expected unit utilizations.³⁰ However, the commenter did not provide any information regarding expected unit utilization, and instead criticized EPA's proposed rates as unobtainable during startup events by providing 25 hours of minimal data regarding one cold-start of Keystone Unit 1 in January 2022. Given that this data covered only 25 hours of startup, and was not then averaged with 29 other days of emission data to arrive at a 30-day average hourly emission rate, it is not proof that this one unit could not meet EPA's 30-day average rate. Absent more robust data to support commenter's claim, EPA declines to amend its proposed rates for the four units at Keystone and Conemaugh based on the thin data presented.

Comment: PADEP asserts that EPA's weighted rate approach is flawed because it relies on an analysis of past averages, which is contrary to the court's instruction that "...an average of the current emissions being generated by existing systems will not usually be sufficient to satisfy the RACT standard."

³⁰ P. 11 of Key-Con's July 11, 2022 comments.

Response: EPA disagrees with the commenter's contention that the analysis underlying EPA's RACT limits is flawed simply due to the fact that EPA uses the mathematical function of averaging as part of the Agency's overall calculation. As the commenter notes, the *Sierra Club* decision does include language noting that "an average of the current emissions being generated by existing systems, will not usually be sufficient to satisfy the RACT standard." 972 F.3d at 300. However, in the preceding sentence, the court provides necessary context for its statement and a helpful summary of what Pennsylvania provided in its prior SIP, EPA's approval of which the Court was vacating. The Court notes that the chosen emission limitation "was selected as it represents the average pollution output of the three plants that are already compliant over the past five years." *Id.* Therefore, the court did not take issue with the mathematical function of averaging; it took issue with the quantity being averaged, and its application in setting RACT. EPA does not believe that the court meant to forbid the use of any averaging in the determination of RACT, so long as it fit within the definition of RACT and the use of such averaging was adequately and reasonably explained in the record.

As explained elsewhere in this action, EPA has used a statistical approach to establish the emission limitations contained in this FIP, which necessarily involves averaging. However, there are significant and meaningful differences between EPA's use of averaging and how PADEP previously used averaging to determine the RACT limits at issue in the *Sierra Club* decision. While Pennsylvania's limit was based on a five-year ozone season average from three plants that were then averaged together again to calculate a single limit required at five different sources, EPA's approach uses a source-specific third-best ozone season rate from a larger range of data. EPA's approach is consistent with the RACT definition, including the interpretation of RACT contained in the *Sierra Club* decision, because it is aimed at representing the lowest rate the source is technologically and economically capable of achieving, not the average rate it has already achieved. (As explained elsewhere in this action, EPA used third-best to represent the source's current capability, but the approach is still aimed at defining the lowest rate, rather than

a 5-year overall average).

Comment: PADEP asserts that EPA's FIP is flawed because it relies on the third-best approach used in the RCU and Good Neighbor Plan, which is inappropriate because those rules evaluated more current data sets, and that EPA's data set selection is not driven by RACT regulations or guidance and does not set source specific limits considering technological and economic feasibility.

Response: EPA proposed to use the third-best ozone season rate for each source based on the idea, which was also cited in both the RCU and the Good Neighbor Plan, that the performance of SCRs degrades over time, and that usually only one layer of catalyst is changed/refurbished per year. Therefore, the SCRs may never be able to achieve the same emission reduction rate as when they started operating and all three catalyst layers were new. With the exception of the Conemaugh plant, which installed its SCRs in late 2014, the other sources installed their SCR by 2003.³¹ Thus, many other parts of the overall SCR system, such as the reagent injection system, may also have deteriorated in performance. The use of the third-best year for each source is consistent with EPA's past practices in other rulemakings, and also has a basis in the performance data of each source. The third-best approach is a reasonable way of determining appropriate RACT limits. It avoids biasing the SCR-on limit with uncharacteristically low emitting ozone seasons, or under uncharacteristically optimal operating conditions. As stated in the April 6, 2022 proposed Good Neighbor Plan, the EPA found it prudent not to consider lowest or second lowest ozone season NO_x emissions rates, which may reflect SCR systems that have all new components. Such data are potentially not representative of ongoing achievable NO_x emission rates considering broken-in components and routine maintenance schedules. Additionally, the fact that CSAPR and the Good Neighbor Plan establish caps rather than limits does not preclude the use of the third-best approach for the purposes of

³¹ As noted in the NPRM, the limits proposed for Conemaugh were based on the second-best ozone season, since Conemaugh's SCR was only installed in late 2014 and EPA therefore doesn't have the same volume of operating data as for the other sources.

the FIP. EPA is finalizing the use of the third-best year for all of the facilities except Conemaugh. As discussed elsewhere in this action, EPA has determined it is appropriate to use a different approach for establishing final RACT limits for Conemaugh due to the fact that Conemaugh has newer SCRs. As further discussed in section IV of this preamble, Conemaugh's final limit was calculated using the second-best rate and the second-best weight due to the more limited data set of years available for this facility based on the more recent installation of SCR.³²

Regarding the claim that the RCU and Good Neighbor Plan used more current data sets, this is because those rulemakings were undertaken under a completely different statutory provision with different requirements and purpose than this FIP. Both the RCU and Good Neighbor Plan FIPs were addressing the requirement in section 110(a)(2)(D)(i)(I) of the CAA to ensure that emissions from upwind sources, including EGUs, were not significantly contributing to nonattainment or interfering with maintenance in downwind areas. The RCU addressed upwind significant contributions to downwind areas for the 2008 ozone NAAQS, while the proposed Good Neighbor Plan addressed upwind emissions for the 2015 ozone NAAQS. As such, for both rules, EPA needed to use the most recently available and up-to-date data for both source emissions and ambient air monitoring results in order to identify upwind emissions currently affecting downwind monitors for the 2008 and 2015 ozone NAAQS. Here, the purpose is to identify RACT, as required under subsections 182(b)(2), 182 (f)(1), and 184 of the CAA, which requires that major sources of NO_x and/or VOCs in nonattainment areas, or in the OTR, meet RACT, which EPA defines as “the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.” Given this different purpose, the examination of historic operating data for the SCRs is relevant to the determination of the NO_x emission rates each source attained while running their SCRs, and which the source was therefore capable of meeting. Also, EPA did consider ozone season emission rates from each source through 2021,

³² The proposed limit used the second best rate and the third best weight.

which was the most recent data available at the time of the proposal, so PADEP's claim that EPA did not consider recent data is incorrect.

Comment: PADEP further asserts that EPA's FIP is flawed because it only considers ozone season data, so fails to consider emissions for a major part of the year. Commenters claim the court acknowledged that their presumptive limit did account for seasonal variability. They cite to *Motor Vehicles Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) ("*State Farm*") (Providing that "the agency must examine the relevant data and articulate a satisfactory explanation for its action including a "rational connection between the facts found and the choice made," and claim that because EPA failed to consider the majority of the operational emissions data (i.e non-ozone season), EPA failed to adequately demonstrate that the proposed limits are technically and economically feasible year-round.

Response: EPA disagrees with PADEP's claim that EPA should consider non-ozone season data for several reasons. Although these sources were subject to the CAIR annual NOx requirements starting in 2009 and the CSAPR annual NOx requirements starting in 2015, these cap and trade programs initially set annual NOx emission budgets for states based on a NOx emission rate of 0.15 lb/MMBtu starting in 2009, then based on a cost-effectiveness level starting in 2015, and allowed individual sources to exceed their allocated allowances by a certain percent by purchasing additional NOx allowances from other sources. As such, the non-ozone season emissions data beginning in 2009 does not necessarily reflect the NOx emission rates these SCRs are capable of achieving outside of the ozone season because the SCRs were not required to meet a specific NOx emission rate. Second, post-2017 (when Pennsylvania's RACT II limit of 0.12lb/MMBtu was effective), data show the sources generally did not operate the SCRs for significant time periods outside of ozone season. Hourly operating data submitted by Keystone and Conemaugh to PADEP show that in 2017, the SCRs did not consistently operate outside of ozone season, with the units at each source often cycling down to low heat inputs at night and

therefore not operating their SCRs.³³ Third, Pennsylvania also based the 0.12 lb/MMBtu emission rate in its RACT II rule solely on ozone season emissions data. Finally, PADEP does not explain why EPA's determination of RACT for these sources would be altered by consideration of non-ozone season data.

Comment: Several commenters objected to EPA's methodology (and thus, results) in calculating the SCR-on/SCR-off thresholds. PADEP in particular asserts that by assigning an operating threshold for SCR operation at each facility, EPA has run afoul of the Court's objection to the 600-degree threshold in Pennsylvania's original RACT II regulation. Further, PADEP asserts that because EPA had only limited information from Key-Con and none from the other facilities, and because we failed to seek such information from the other facilities, the resulting emission limits are unsupported. Another commenter asserted that EPA's visual evaluation of scatterplot data to develop the thresholds was flawed, and that rather than accurately depicting the SCR-on/SCR-off thresholds, the diagrams actually depict the minimum sustainable load for the unit, which is "...typically the level at which PJM places a unit at low load for spinning reserve during periods of low demand." See Homer City Comments at 2. Additionally, commenters assert that the use of 0.2 lb/MMBtu as an indicator of when the SCRs are or are not running is arbitrary, since there are times when an SCR is off, but the NO_x emissions are below 0.2 lb/MMBtu, and conversely, there are times when an SCR is running, but the NO_x emissions are greater than 0.2 lb/MMBtu.

Response: First, EPA disagrees with Pennsylvania's assertion that the methodology for determining the SCR-on and SCR-off weights and rates using observed SCR thresholds in the data for purposes of developing an emissions limit that would restrict SCR-off operation is substantially similar to PADEP's use of the 600-degree threshold to justify essentially unlimited

³³ For examples of this SCR-off operation, see the xl spreadsheet in the docket entitled "KEY_Hourly emissions and operating data 2017-2020_06-24-21." For Keystone Unit 1, see February 5th to 28th, 2017, and for Unit 2 see October 1 through 30th, 2017. For Conemaugh, see the spreadsheet in the docket entitled "CON_Hourly emissions and operating data 2017-2020_6-24-21." For Unit 1, see January 21 through 23rd, 2017 and for Unit 2 see April 15th through 17th, 2017.

SCR-off operation. EPA further disagrees that the *Sierra Club* adverse decision concerning the 600-degree threshold has direct relevance to the permissibility of the approach used by EPA in utilizing SCR-on and SCR-off weights and rates. The Court found that Pennsylvania’s blanket 600-degree temperature threshold, which Pennsylvania applied uniformly to all the sources regardless of the differences in SCRs at each source, was inadequately explained or supported by the record. 972 F.3d at 303 (“Regarding the threshold, neither the EPA nor DEP can explain why it is necessary at all.... [E]ven assuming such a temperature threshold were reasonable, the record does not support the conclusion that 600 degrees Fahrenheit is the proper limit.”) EPA’s SCR-on and SCR-off thresholds were derived through careful unit-by-unit observation of actual operating data. Furthermore, rather than drawing a regulatory line below which less stringent emissions limits apply without any restriction on operating time, EPA used the 0.2 lb/MMBtu threshold to divide the operational data into SCR-on and SCR-off categories, then used those data to establish both average SCR-on and -off rates for each unit, and to identify the unit’s past percentage of ozone season time with the SCR on or off to establish the weight applied to the respective rates. As such, the 0.2 lb/MMBtu is not an enforceable limit, but merely a data point that was one component of EPA’s approach to use historical operating data to derive the lowest emission limit that these particular sources are capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

As for the assertion that the 0.2 lb/MMBtu cutpoint is arbitrary, EPA conducted a fleetwide analysis of EGUs with combustion and post-combustion NO_x controls and found that this rate indicates that the SCR is running to some extent.³⁴ Nevertheless, in response to our May 25, 2022 (87 FR 31798) proposal, EPA did in fact receive additional information from certain sources (Montour and Homer City) regarding what they consider the proper megawatt (MW) threshold for operation of their SCRs. As described in section IV of this preamble, we

³⁴ See “Attachment 3-1 NO_x Rate Development in EPA Platform v6” for EPA’s Power Sector Modeling Platform (IPM) at <https://www.epa.gov/system/files/documents/2022-02/attachment-3-1-nox-rate-development-in-epa-platform-v6-summer-2021-reference-case.pdf>.

have taken that information into account in developing the NO_x emission limits finalized in this action.

Comment: PADEP asserts that EPA's statistical approach to RACT in this case has led to absurd results, specifically a higher limit for Conemaugh than for Homer City and Keystone, despite the fact that Conemaugh's SCRs are newer and technically capable of achieving lower NO_x emission rates.

Response: EPA has developed the emissions limits for each source based on analysis of historical data for each source demonstrating what emissions the sources are capable of achieving through operation of their installed SCR equipment. The emission limits being established for Keystone are based on analysis of historical data extending back to 2003, while the emissions limits being established for Conemaugh are based on historical data extending only back to 2015 due to the more recent SCR installations at Conemaugh. Because the shorter historical period of the Conemaugh data set does not contain periods with high NO_x allowance prices that would necessarily have motivated Conemaugh to try to achieve the lowest possible emissions, it is possible that EPA's resulting emissions limits for Conemaugh are less stringent than would have been established with a more extensive data set. However, the limitations of the data available for Conemaugh in no way render the Keystone emission limits unreasonable. Nevertheless, the comment does illustrate that EPA should adjust its approach to account for the more limited Conemaugh data. As further discussed in section IV of this preamble, in response to comments received, EPA is finalizing limits that differ slightly from what was proposed, including an adjustment for Conemaugh that better accounts for the more limited set of ozone seasons from which to draw data for this source, while also addressing the circumstances that prompted the PADEP comment regarding absurd results. The Agency determined that for Conemaugh, it is reasonable to use the second-best weight instead of the third-best.

Comment: PADEP asserts that EPA should have considered tiered limits as they did, and that such a limit structure would, in fact, result in optimized SCR operation.

Response: EPA disagrees that we needed to establish a tiered limit structure like the one that was vacated by the Court, or the similar approach used by PADEP in their case-by-case permits. As explained in the proposal and the earlier section of this preamble, EPA did consider the appropriateness of tiered limits and opted to not propose such an approach for several reasons. First, while the Court did not explicitly preclude the threshold approach, they were clearly suspicious of its appropriateness: “Regarding the threshold, neither the EPA nor DEP can explain why it is necessary at all. It is not a common exemption.” *Sierra at 20*. Upon reconsideration, EPA believes that it is not necessary. EPA continues to believe that constraining SCR-off operation to the extent possible based on data reflecting the recent operations of each source is the appropriate means of implementing emission limits consistent with RACT. As EPA raised in the on-record comments we submitted to PADEP on draft permits,³⁵ it is not clear to EPA how a tiered limit approach constrains SCR-off operation in any meaningful or enforceable way.³⁶ Moreover, unconstrained SCR-off operation would be inconsistent with the Court’s directive that the RACT limit must be technology-forcing.³⁷ A set of limits that does not place limits on the source operating without its NO_x control technology is not technology-forcing. Accordingly, EPA has chosen to forgo the tiered limit approach, and instead use a weighted rate approach, which we continue to believe provides the sources flexibility to address current operational realities (*i.e.*, increased cycling), while at the same time providing meaningful constraint on SCR-off operation and objective enforceability.

Comment: Talen Energy (Montour) asserts that EPA’s limits are so restrictive that they extend the regulatory regime beyond the customary regulation of air pollutant emissions, and in effect dictate operation of units and may severely limit the ability of the units to run as directed by PJM and potentially compromise grid reliability.

³⁵ See document ID EPA-R03-OAR-2022-0347-0067 in the docket for this action at www.regulations.gov.

³⁶ EPA has not yet evaluated and is not pre-determining the approvability Pennsylvania’s ultimate SIP revisions, which were submitted on May 26, 2020 and June 9, 2022.

³⁷ *Sierra Club at 309*.

Response: EPA disagrees that these FIP limits are too restrictive or that they extend the regulatory regime beyond EPA's Clean Air Act authority or customary EPA action in a way that is inappropriate or inconsistent with past CAA implementation. Emission limitations are, by definition, a limitation on the amount of pollutants that may be emitted by a source and therefore all emission limits place restrictions on how sources operate in some fashion. For example, states or EPA may place enforceable requirements on sources for throughput limitations; federally enforceable requirements of this nature are a standard practice that substitutes for major source applicability of new source review (NSR) or national emission standards for hazardous air pollutants (NESHAPs). Some emission limitations may also take the form of work practice standards, which could place requirements on the type of fuel a source may use or limit the amount of time a source may operate under a certain status. These FIP limits do not prescribe when or how the affected units should operate in order to generate electricity. Rather, these limits ensure that when the units are operating, their already installed SCRs are also operated in a way that achieves the lowest emission rates that are technically and economically feasible.

As discussed previously in this notice, EPA acknowledges that the weight given to the proposed SCR-off limit has the effect of limiting the portion of time a cycling source can operate in SCR-off mode and incentivizes a source to shift to SCR-on mode to preserve headroom under the limit. While driving SCR operation, the weighted limit accommodates the need for an EGU to occasionally cycle down to loads below which SCR can operate effectively. Nothing in the FIP being finalized in this document is intended to prohibit SCR-off operation, nor does it dictate specific times when SCR-off operation would not be permitted to occur.

Comment: Montour commented that the compliance date should be extended and not be the same date as the effective date of the regulation. Citing the need to identify and evaluate the updates/changes necessary, update programming for the CEMS and process control equipment, provide training to staff, and complete operational trials, Montour suggested extending the compliance date by six months. Other sources commented that EPA should not proceed at all

with a final rule at this time and instead seek an extension from the Court to reconsider the proposed limits.

Response: Before addressing the substance of this comment, EPA would like to correct an error in the NPRM regarding the effective date of the FIP. The effective date of the regulation was intended to be conveyed as an editorial note that the rule would be effective 30 days after publication of the final rule. Instead, the editorial note was converted into an actual date by the publisher, which was 30 days after the date the proposed rulemaking was published: June 24, 2022. This was a typographical error that produced an absurd result: the rule could not possibly be effective before a final approval, or indeed, even before the public comment period had ended (on July 11, 2022). The proposed compliance date was accurately described to “commence immediately upon the effective date.”³⁸

With regard to Montour’s request to extend the compliance date, EPA agrees there will be a certain amount of time required for the facilities to adjust to the new requirements and make certain technical and administrative changes to ensure operations comply with the new RACT limits. After considering comments received on this rulemaking, EPA has determined that it is appropriate to extend the compliance date past the initial proposal of 30 days after the effective date of these regulations. The commenters have raised compelling concerns about being able to meet new, more stringent limits on the accelerated timeline. In light of the comment received from Montour, EPA is finalizing a compliance date of 180 days after the effective date of the FIP. EPA is under Court Order to “. . . either approve a revised, compliant SIP within two years or formulate a new [FIP],” which EPA interprets as requiring a final rule by August 27, 2022. Therefore, EPA will finalize the final rule in compliance with the Court.

Comment: Homer City asserted that EPA’s description of the methodology for determining SCR-on and SCR-off weighting is inadequate to allow for independent verification.

³⁸ The proposal erroneously published the effective date of the rule as June 24, 2022 and not as an editorial note that the rule would be effective 30 days after the publication of the final rule. See 87 FR 31813.

Also, Homer City also commented that there is no explanation as to why the SCR-off weights (0.00 or 0.01) are so small, which leave no margin for SCR-off operation.

Response: The commenter did not provide adequate explanation as to why or where it had difficulty in understanding or replicating the calculations EPA outlined in the proposed notice. Homer City also did not submit its attempted calculations for EPA's consideration. All of the data EPA used to develop the proposed emission limits (including that which was used to establish the SCR-on and SCR-off weights) was either available in the docket, or, because of file type and size limitations of *www.regulations.gov*, was available upon request.³⁹ Other commenters were able to replicate and/or modify EPA's methodology. Homer City's weights are representative of their ozone season operation over the time period analyzed for the weights (2011 to 2021). Further discussion of their revised weights can be found in section IV of this preamble.

Comment: Sierra Club asserts that the requirement that the sources submit reports of their compliance every six months should be shortened to every three months (quarterly), because the information needed to demonstrate compliance with the FIP is already submitted to EPA for various purposes on a quarterly basis, and that it does not make sense for the FIP to require less frequent (biannual) reporting. In addition, if EPA elects to keep the FIP reporting data separate from reporting to the Clean Air Markets Division, Sierra Club requests that EPA put a mechanism into the FIP by which the public can readily access this data to ensure compliance, such as posting that data to the Clean Air Markets Program Data tool. Finally, the commenter requests that the FIP recordkeeping requirements be updated to include information about SCR runtime and/or bypass as well as reagent usage.

Response: EPA selected the six-month reporting period in order to be consistent and streamlined with the sources' existing title V reporting requirements. These title V reports are

³⁹ See "Memo to Docket – Availability of Additional Information," document number EPA-R03-OAR-2022-0347-0060.

submitted to EPA Region 3 and the state for review. The fact that certain data used to determine compliance with the FIP requirements are also reported quarterly to other EPA offices under various programs, such as the Acid Rain program and Cross State Air Pollution Rule, and then placed into EPA's Clean Air Markets Data Program online tool, does not provide a sufficient basis to increase the frequency of reporting compliance with the FIP requirements to match the reporting frequency for the underlying data. There is nothing about the FIP limits that would necessitate a reporting frequency greater than the reporting frequency required by title V. The FIP does require deviation reports to be submitted to EPA when NO_x emission limits have been exceeded for three or more days in any 30-day period.

With respect to the assertion that the reporting requirements should be updated to include SCR runtime and reagent injection data, EPA believes that reporting of CEMS data consistent with title V requirements is sufficient for compliance demonstration purposes. EPA has not tied the emission limits directly to SCR operating parameters in a way that would necessitate the submission of additional SCR data. Compliance with the emission limits is the ultimate regulatory requirement, and this is adequately demonstrated through submission of CEMS data. EPA does not believe it is appropriate at this time to include reporting requirements to this FIP that are not directly necessary to show compliance with the regulatory requirements finalized herein.

Regarding the assertion that EPA should provide mechanism by which the public can readily access additional data beyond the regularly reported emissions data to ensure compliance, such as posting that additional data to the Clean Air Markets Program Data tool, EPA is not taking that step at this time. There is nothing about the NO_x limits in this FIP which would require EPA to provide a novel approach to providing access to additional compliance data. Further, the tools EPA makes available for providing the public with access to reported emissions data are not at issue in this proceeding, and comments requesting changes to those tools are outside the scope of the rule.

Comment: Sierra Club asserts that EPA should have used the best year, rather than the third-best, which is what EPA used in establishing the SCR-on rate. First, they assert that EPA has not established that control equipment degrades over time, and that by selecting the third-best ozone season, EPA is allowing sources to forgo maintenance and good operating practices that would allow them to otherwise meet limits that were established on a best ozone season basis. Further, pointing to the rates achieved during the period of 2003-2010 when NOx allowance prices were high due to the NOx SIP call, Sierra Club asserts that the decline in SCR performance is due not to equipment degradation, but to the lack of a regulatory requirement to achieve better emissions. Finally, Sierra Club asserts that an examination of the best performing years does not support the idea that equipment degradation due to the passage of time necessarily leads to an inability to meet lower limits, and again asserts that higher emissions rates are tied to less stringent regulatory requirements rather than equipment degradation.

Response: EPA disagrees that we should have used the best ozone season instead of the third-best to establish the SCR-on rate. First, although equipment degradation is not the only consideration we evaluated when selecting the third-best approach, it is certainly a contributing factor. While degradation can be slowed or mitigated through proper operation, there is little question that it occurs and can impact the removal efficiency. EPA has explained this previously that “[o]ver time, ... the catalyst activity decreases, requiring replacement, washing/cleaning, rejuvenation, or regeneration of the catalyst.”⁴⁰ EPA acknowledges that catalyst management practices can be adapted to address catalyst degradation, but that does not mean that the degradation does not occur.

In addition, EPA’s longstanding interpretation of RACT does not require RACT-level controls to be equivalent to the “best.” The Court agreed with this interpretation in the *Sierra Club* decision: “we do not suggest that Pennsylvania must achieve the absolute lowest level of

⁴⁰ See https://www.epa.gov/sites/default/files/2017-12/documents/scrcostmanualchapter7thedition_2016revisions2017.pdf at 16.

emissions that is technologically possible for the approved limit to satisfy RACT.”⁴¹ As explained in the NPRM and in response to the previous comment, EPA believes that the third-best approach is a reasonable way of establishing appropriate RACT limits. Use of the third-best year avoids biasing the limit with uncharacteristically low emitting ozone seasons, or under uncharacteristically optimal operating conditions.

EPA does agree with the commenter that there does appear to be a correlation between increased SCR operation (and correspondingly lower NO_x emissions), and periods when new regulatory requirements such as CAIR, CSAPR, the CSAPR Update, and the RCU, have created meaningfully more stringent NO_x emission budgets. More stringent emissions budgets can compel EGUs to operate their SCRs more often and at lower NO_x emission rates to meet these new budgets. They accomplish this result by raising the cost of NO_x allowances, creating an economic incentive for EGUs to operate their SCRs more often and at lower NO_x emission rates to either avoid having to purchase costly allowances or to generate NO_x allowances to sell. EPA continues to believe that our proposed weighted rate approach takes these factors into consideration and establishes appropriate limits that are consistent with the CAA’s RACT requirements.

Comment: Similar to comments relating to EPA’s consideration of operating data from years when the units were operating in a base load capacity, commenters assert that ozone season operations are not consistent with year-round operations and therefore should not be the sole timeframe considered in development of the limits that apply all the time. Further, Key-Con in particular noted that the SCRs at Keystone were designed to only run during ozone season, and that in the past, they had considerable down time for cleaning and maintenance of the controls. Additionally, they assert that ammonium bisulfate salts (ABS) form more readily in colder ambient temperatures, leading to increased fouling.

Response: EPA acknowledges some of the technical challenges associated with

⁴¹ 972 F.3d at 302.

temperature and SCR activity. Because of this, among other reasons, we performed an analysis of actual operating and emissions data and developed reasonable limits to account for challenges such as seasonal ambient temperature changes and increased cycling operation rather than selecting the absolute lowest rates that these units have ever achieved. EPA primarily used ozone season data to develop these limits, which is appropriate, not only because the ozone season generally represents a period of increased electricity demand and operation at these sources, but also because it is indicative of what these units can achieve when there are additional regulatory constraints and economic disincentives against sub-optimal SCR operation in place.

To the degree that the comment is suggesting that this RACT FIP should create seasonal limits that do not require SCR operations in non-ozone-season months, the EPA does not believe that this would be consistent with the CAA RACT requirement. As noted in the background of this preamble, NO_x RACT for major sources is required to be applied year-round. There are numerous coal-fired EGUs operating in the OTR that operate SCR controls on an annual basis. Additionally, there are coal-fired EGUs operating outside the OTR subject to other regulations that mandate SCR controls be operated throughout the year as well. Like the four Pennsylvania facilities addressed in this notice, many of these other coal-fired EGUs were built in the same era (1960s and 1970s) and then later retrofitted with SCRs in response to the EPA interstate transport requirements for ozone season NO_x emissions, which began in 2003. So, while EPA has applied RACT on a case-by-case, source-specific basis, EPA cannot ignore the fact that there are many coal-fired EGUs, outside of Pennsylvania, that can, and do, operate their SCR controls year-round with NO_x emission limits similar to the final limits determined in this notice for the purposes of NO_x RACT as well as for other regulatory requirements⁴².

⁴² Delaware Administrative Code, Title 7 Natural Resources & Environmental Control, 1100 Air Quality Management Section, 1146 “Electric Generating Unit (EGU) Multi-Pollutant Regulation”.

Maryland - Code of Maryland Regulations (COMAR), Title 26 Department of the Environment, Subtitle 11 Air Quality, Chapter 38, “Control of NO_x Emissions from Coal-Fired Electric Generating Units”

New Jersey State Department of Environmental Protection, New Jersey

EPA also disagrees that the Keystone units cannot operate their SCRs effectively outside of the ozone season or that the rates must be further adjusted to account for seasonal effects. In response to Keystone's comment, EPA further reviewed non-ozone season emissions data reports for Keystone units and found that between 2009 and 2010, both Keystone units operated their SCRs in non-ozone season months for extended periods whereby their NO_x emissions were generally below the final NO_x emission limits determined in this notice⁴³. Therefore, EPA cannot justify exempting Keystone from operating its SCRs, with reasonable effectiveness, for NO_x RACT during non-ozone season months.

Comment: Key-Con asserts that EPA's limits severely and inappropriately limit the amount of time either facility can operate without ammonia injection, especially during start-up and low load operation. They further assert that the duration of a cold start-up is 18-24 hours, and that at loads between the minimum sustainable load (340 MW) and the unit load (which they do not identify) where the minimum continuous operating temperature (MCOT) of the SCR is reached, emissions can reach 0.35 lb/MMBtu for Keystone units, and 0.30 lb/MMBtu for Conemaugh. They assert that Keystone units 1 and 2 in particular would be unable to demonstrate compliance if there was one cold start-up in a 30-day period, even if they spent the rest of the time operating at the proposed limit of 0.074 lb/MMBtu.

Response: Key-Con's comment is not sufficient to demonstrate an inability to meet the proposed FIP limits. Key-Con presented no data to justify the amount of time spent in a cold start-up during which the unit load is above the sustainable limit, but below whatever threshold is necessary to bring flue gas up to the MCOT of the SCR and begin ammonia injection. As noted in a previous response, Key-Con did not provide any information regarding expected unit utilization, and instead criticized EPA's proposed rates as unobtainable during startup events by

Administrative Code, Title 7, Chapter 27, Subchapter 19, "Control and Prohibition of Air Pollution from Oxides of Nitrogen".

"Coal-Fired Power Plant Enforcement" US EPA, retrieved August 2022. See <https://www.epa.gov/enforcement/coal-fired-power-plant-enforcement>

⁴³ "Custom Data Download" US EPA Clean Air Markets Program Data, retrieved August 2022, see <https://campd.epa.gov/data/custom-data-download>

providing 25 hours of minimal data regarding one cold-start of Keystone Unit 1 in January 2022. Given that this data covered only 25 hours of startup, and was not then averaged with 29 other days of emission data to arrive at a 30-day average hourly emission rate, it is not proof that this one unit could not meet EPA's 30-day average rate.

In response to this comment, EPA further reviewed startup data for Keystone in non-ozone season months. On November 5, 2009, Keystone Unit 1 started operations after having been inoperable since October 20, 2009. During the first three days of operation, the daily NOx emission rates were 0.229, 0.160, and 0.058 lb/MMBtu respectively. During the subsequent days of operation, up until reaching 30 operating days, the daily NOx emissions varied from a low of 0.046 to a high of 0.116 lb/MMBtu. The resultant 30-day NOx emission rate after 30 days of operation was 0.064 lb/MMBtu.⁴⁴ This is well below the final NOx emission rate limit determined in this notice of 0.075 lb/MMBtu. This example illustrates that the unit is entirely capable of achieving the emission rate limits in this notice, with startup periods, provided the normal operating days are sufficiently controlled and the facility was able to achieve these results without a specific 30-day regulatory requirement to do so. Moreover, EPA has purposely granted an emission rate averaged over 30 days, which is the maximum averaging time EPA can grant for NOx RACT. EPA has also issued facility-wide emission rate limits to allow the facilities to further average the emission rates amongst their units. This amount of dual averaging, in terms of averaging days and then units, affords Key-Con, and the other facilities, additional flexibility to manage startup operations.

Further, even if we are to accept this claim on its face, Key-Con's argument fails because they merely point out the obvious mathematical certainty that any appreciable amount of time spent operating above the average limit would lead to a violation if the entirety of the remaining averaging period was spent operating exactly at the limit. The entire purpose of establishing average limits (and in this case a 30-day average) is to smooth out the peaks and valleys of

⁴⁴ See "Keystone winter-time SCR use unit 1.xlsx" in the docket for this action.

shorter-term emissions and arrive at a limit that can be met by offsetting periods when the units emit above the limit (generally, SCR-off periods), with periods of optimal operation where the units emit below the limit (generally, SCR-on periods). This is one of the reasons that we did not select the lowest achievable SCR-on rate as RACT. EPA's limits provide for some level of SCR-off operation, while still representing the lowest rate the source is capable of meeting over such period through the application of control technology that is reasonably available considering technological and economic feasibility. To the degree that this limit acts as a constraint on low-load operation without the SCR, the commenter did not explain why such a constraint is inappropriate. In light of the high NO_x emissions that can occur with such operation, the EPA believes this is a reasonable approach to define a limit that represents the application of RACT. Moreover, Key-Con's own analysis appears to support an ability to meet 0.075 lb/MMBtu, even based on cold start-ups taking place in January.⁴⁵ As discussed in section IV of this preamble, EPA has re-evaluated our proposed limits, with the resulting limits being consistent with what Key-Con's comments appear to show is attainable.

Comment: Homer City asserts that because the proposed 24-hour mass limits are based on the 30-day average rate limits, the mass limits do not provide adequate margin for periods of start-up and shut down.

Response: EPA disagrees. First, as previously discussed, the 30-day rate-based limits upon which the daily mass limits are based were derived in such a way as to incorporate several layers of flexibility, or margin, including emissions during periods of startup and shutdown. We used weighted averages considering years when the units were operating in more of a load-following mode rather than as baseload, we used a 30-day averaging period to "smooth" variability of shorter-term emissions, and we used the "third-best" rather than the "best" approach in order to add additional buffer and still establish limits that represent RACT. Additionally, it is not clear what period of time the commenter is considering as "startup," nor

⁴⁵ *Id.*

have they established that they could not begin operating the SCRs sooner. While emission rates during the startup process do tend to be higher before the control equipment is fully operational, mass emissions are typically lower for most startup hours, since startup generally happens at lower levels of fuel combustion. Finally, commenters have not presented any actual operating data to demonstrate that they cannot meet the proposed limits. Indeed, EPA's review of historical data, and in fact, some data from the 2022 ozone season reported so far, supports a determination that the sources can achieve EPA's final 30-day NO_x emission rate limits, and that when the units operate in compliance with the 30-day rate limit, they have generally operated below the final daily NO_x mass emission limits.

Comment: Homer City claims that EPA's proposed limits are not technically feasible because, they assert, from 2010-2021, only Keystone and Conemaugh Units 1 and 2 have been able to achieve EPA's proposed limits on a 30-day basis, and even then, it was only 7 instances or 6.36% of the time.

Response: First, if sources were not meeting the proposed limits in the selected years during which there was no regulatory requirement or economic incentive to do so, it is not necessarily proof that they could not have. Nor is it proof that they cannot in the future. EPA notes that in rejecting EPA's approval of PADEP's original 0.12 lb/MMBtu limit as "a mere acceptance of the status quo," 972 F.3d at 302, the Court in *Sierra Club* affirmed that "an average of the current emissions being generated by existing systems, will not usually be sufficient to satisfy the RACT standard," *id.* at 300. Homer City rejects EPA's limits, but presents no data or analysis that demonstrates what they are in fact capable of achieving, and what EPA should establish as RACT for these units. EPA has demonstrated that the limits are achievable when the regulatory environment requires it, and that the limits in the FIP represent RACT for these sources.

Comment: PADEP asserts that EPA's FIP is based on an incomplete record. First, PADEP asserts that EPA ignored information that the Department obtained from the sources and

failed to obtain additional information that would be necessary to conduct a source specific RACT analysis. Additionally, PADEP claims that meetings between EPA staff and the Maryland Department of the Environment (MDE) prior to our proposal may be relevant to the development of the FIP, and that records from that meeting should have been in the docket.

Response: EPA disagrees. First, to the extent it was relevant to our approach, we did consider the information that PADEP obtained and submitted, and in fact cited to it on numerous occasions, and included it in the record as appropriate. EPA had a sufficient technical basis, that is thoroughly documented in the rulemaking record, to support the RACT limits included in this FIP. To the extent that PADEP or the sources at issue in this rulemaking believe the Agency should have considered additional or alternative data, the 45-day comment period provided an opportunity for the sources to submit such information. EPA considered all of the additional information submitted prior to finalizing the FIP. With respect to the assertion that records from EPA's discussions with MDE prior to EPA proposing this action should have been contained in the record, EPA disagrees. All documentation and information that EPA relied upon in developing this rule action have been included in the record. The cited discussion with MDE did not contain information that was relied upon for development of the FIP approach and limits.

Comment: Montour submitted a technical analysis which built upon EPA's methodology in the May 25, 2022 (87 FR 31798) NPRM in order to demonstrate what they felt are more achievable limits, based on a dataset that represents what Montour contends are more consistent with current operating parameters. Montour asserts that EPA should have only considered ozone season data from 2017-2021, that the correct SCR threshold is 440MW, and that as a result, Montour should have a facility-wide, 30-day NO_x emission rate limit of 0.099 lb/MMBtu, with daily mass-based limits of 17,385 and 17,200 lb NO_x/day for Units 1 and 2, respectively.

Response: As further discussed in section IV of this preamble, as a result of comments received and while largely retaining the methodology described in the NPRM, EPA has revised some of the limits from the proposal based on the submittal of additional data or the

reconsideration of some of the weights in the case of Conemaugh. Specifically, in cases such as Montour where a facility submitted SCR threshold data to counter that which EPA used in the proposal, EPA recalculated the NO_x rate limits using the facility's information, but EPA's original methodology. In the case of Montour, this recalculation resulted in limits that are very much in line with the alternate limits proposed by the facility in its technical analysis.

Specifically, EPA's methodology resulted in a facility-wide, 30-day NO_x emission rate limit of 0.102 lb/MMBtu, and daily, mass-based limits of 17,912 and 17,732 lbs NO_x/day for Units 1 and 2, respectively. In the interest of consistency, EPA is finalizing the limits derived from our original methodology rather than the alternate limits proposed by Montour. Additionally, because EPA's limits are in line with, and in fact very slightly higher than what Montour proposed, EPA is not evaluating the remainder of Montour's technical analysis.

Comment: Several commenters assert that because achieving compliance with MATS has a negative effect on NO_x reduction efficiency, EPA should not have considered years prior to MATS requirements, and that the limits are therefore too stringent.

Response: EPA recognizes the co-benefits of SCRs regarding the oxidation and ultimate removal of mercury from flue gas. Commenters suggest that there is a trade-off between NO_x and mercury removal, resulting in higher NO_x rates to ensure sufficient mercury capture. EPA has conducted analysis to evaluate this contention in a previous rulemaking. Specifically, to respond to comments received on the proposed CSAPR Update, EPA examined ozone-season NO_x rates from 86 units subject to the MATS rule with SCR and rates below 0.12 lbs NO_x/MMBtu in 2015 (*i.e.*, units that were removing the necessary mercury while operating their SCRs during the 2015 ozone season). EPA selected the rate cut-off of 0.12 lbs NO_x/mmBtu to clearly identify units that were operating their SCR. EPA found that the average 2015 NO_x rate at these 86 units was 0.072 lb/MMBtu. The average rate for these same units in previous years was 0.080 and 0.078 lb/MMBtu for 2014 and 2013, which was prior to the MATS compliance date when the units would have only needed to optimize operations for purposes of NO_x removal

rather than mercury removal. The 2014 and 2013 rates were each statistically significantly higher than the rate in 2015 when these units were complying with the MATS rule (Student's t-test probability (p) <0.03 and 0.03). Based on the CSAPR Update analysis, which is included in the docket for this rulemaking,⁴⁶ EPA concludes that units are able to simultaneously comply with MATS (*i.e.*, remove mercury from flue gas) while maintaining or even lowering their NO_x rates, and that the comment therefore does not provide a sufficient basis for EPA to exclude data from years before MATS implementation from the analysis conducted for this rule.

Comment: Several commenters note the role PJM plays in directing the units' dispatch and then assert various implications concerning the feasibility or cost of the proposed emissions limits. For example, Talen states that "PJM retains complete and unilateral discretion for calling the units to run at certain load profiles. In addition to directing Montour SES when to start up the units, PJM's typical dispatch also includes the lowering of the unit output down to minimum load during off-peak periods daily." Talen further states that "PJM dispatch information can dictate the ramp rate of the unit after a startup. It is not wholly in Montour SES's control to adjust unit operation to fit EPA's proposed model." Homer City states that "operations today are, in large part, determined by PJM and are beyond control of the source operators" and that the proposed emissions limits would not accommodate emissions during "startups, shutdowns, and low-load operations directed by PJM." Homer City also asserts that sometimes "[PJM's] direction requires Homer City to operate at levels ... which [do] not allow for operation of the SCR." Key-Con states that, "in general" dispatch of units in the PJM market "is controlled by PJM, not the EGU owner or operator." Key-Con suggests EPA has assumed that unit owners can choose to ignore PJM's dispatch instructions. Key-Con also states that the proposed emission rates "will require Key-Con to forfeit most dispatch opportunities at lower electrical loads as directed by PJM and suffer resultant revenue impacts in order to maintain compliance with the limits."

⁴⁶ See MATS Compliance Impact on SCR Control Rates.xlsx.

Response: The fact that PJM generally directs the day-to-day and hour-to-hour dispatch of the units subject to this rule is not in dispute, and any comments suggesting that EPA has assumed otherwise mischaracterize the proposal.⁴⁷ However, in EPA's view, the consequences that commenters assert could result from requirements to follow PJM's dispatch instructions are unrealistic because the commenters largely fail to acknowledge sources' considerable ability to influence those instructions through the offer prices and operating parameters that the sources provide to PJM for use in PJM's decision-making process. In particular, EPA does not agree with commenters' suggestions that PJM's dispatch instructions would create a material obstacle to the sources' efforts to comply with the limits in an economic manner. Rather, EPA believes it is entirely reasonable to assume, first, that the source owners will have the opportunity to consider their emission limits when developing the information they supply to PJM for use in PJM's decision-making process and, second, that PJM's subsequent dispatch instructions will consider the information supplied by the owners when determining the dispatch instructions. In other words, contrary to the commenter's suggestions, EPA believes that the sources' role as suppliers of inputs to PJM's decision-making process means that the sources in fact are well positioned to prevent PJM's dispatch instructions from interfering with the sources' compliance strategies.

A few examples of the information that sources can specify to PJM for use in PJM's decision-making illustrate how the sources covered by this rule could cause PJM to issue dispatch instructions that are generally compatible with what the source owners consider necessary to facilitate effective SCR operation. First, the operating parameters that a source can specify include "Economic Min (MW)," representing the owner's specification of "the minimum energy available, in MW, from the unit for economic dispatch" under non-emergency

⁴⁷ For example, EPA views Key-Con's extended argument that sources do not have incentives to violate PJM's dispatch instructions not as an attempt to rebut anything EPA actually said in the proposal but rather as the creation and subsequent rebuttal of Key-Con's own strawman.

conditions.⁴⁸ If a source is concerned about the possibility that PJM otherwise might direct the unit to run extensively – for example, during all or most overnight off-peak hours – at low load levels that would be insufficient to maintain SCR inlet temperatures high enough for effective SCR performance, the source can avoid that outcome by specifying higher values for Economic Min (MW). Second, the operating parameters include “Ramp Rate (MW/Min),” representing the default rate, in MW per minute, for increasing or decreasing a unit’s output.⁴⁹ If a source is concerned about the possibility that PJM would otherwise frequently direct the unit to increase or decrease its output at rates that would cause difficulty in sustaining consistent SCR performance, the source can avoid that outcome by specifying lower values for Ramp Rates. Third, sources can submit cost-based or price-based values for a variety of parameters associated with unit start-ups, such as “Cold Startup Cost,” “Intermediate Startup Cost,” and “Hot Startup Cost,” representing the cost-based or price-based offers for the source’s compensation for each start-up, differentiated according to the unit’s temperature before the start-up.⁵⁰ If a source believes that its compliance strategy should include efforts to reduce start-up emissions by substituting gas or oil for some of the coal that would otherwise be combusted during the start-up process, the source generally can revise its offered Startup Cost values to reflect any resulting changes in start-up fuel cost.

EPA recognizes that under certain emergency system conditions, PJM may issue dispatch instructions that reflect various “emergency” parameters rather than the parameters discussed above that would be used for economic dispatch under more typical system conditions. EPA further recognizes that dispatch instructions issued by PJM in an emergency could theoretically require a unit to temporarily operate in a manner that precludes effective SCR operation until the emergency ends or until PJM can implement alternative measures to address the emergency.

⁴⁸ See the PJM Markets Gateway User Guide (PJM Guide), available at <https://pjm.com/~media/etools/markets-gateway/markets-gateway-user-guide.ashx>, at 35.

⁴⁹ See PJM Guide at 35. Different Ramp Rate values can be specified for different portions of a unit’s overall load output range, and different values can be specified for output increases and output decreases. *Id.* at 38-40.

⁵⁰ See PJM Guide at 51-53.

EPA is also aware that PJM's procedures include lead times that may affect how soon sources could change certain elements of the information they provide to PJM for use in PJM's decision-making. However, EPA believes these considerations are sufficiently addressed by the fact that the emission rate limits established in this rule are defined as 30-day rolling averages and the fact that EPA is not making the requirements established in this rule effective until 180 days after the rule's effective date.

EPA found no information in the comments indicating that the sources could not improve their abilities to run their SCRs continuously or at improved overall emissions rates by taking advantage of opportunities to optimize the values they provide to PJM for offer prices and operating parameters, potentially including but not limited to Economic Min (MW), Ramp Rate (MW/Min), and Cold, Intermediate, and Hot Startup Cost.⁵¹ Rather, in suggesting that PJM's dispatch instructions could conflict with the proposed emission limits, commenters relied solely on the fact that the sources generally must comply with PJM's instructions once the instructions are issued, with no discussion of the process by which PJM determines what its instructions should be and no discussion of the sources' own opportunities to influence that process.⁵²

⁵¹ In addition to Economic Min (MW), sources can also specify "Economic Max (MW)," representing the owner's specification of the maximum energy available from the unit for economic dispatch under non-emergency conditions. See PJM Guide at 35. PJM evaluates whether the ratio of the value submitted for Economic Max (MW) to the value submitted for Economic Min (MW) – known as the "Turn Down Ratio," see PJM Guide at 103, falls below a default floor value established by PJM for that type of unit. If so, the source must obtain PJM's approval for the submitted Economic Min and Economic Max parameter values (*i.e.*, an "exception" to the Turn Down Ratio default floor value) by providing additional information to justify the source's submitted values. In an attachment to its comments, Key-Con has indicated its awareness of the availability of such exceptions and its expectation that PJM would likely be willing to approve exceptions if needed to facilitate continuous SCR operation during overnight off-peak periods. See Key-Con comments, attachment 3 at 20-22. Moreover, the operating data reported for Keystone to EPA for May and June of 2022 appear to show that Key-Con has in fact received approval of such an exception, because the Keystone units' ratios of daytime maximum load levels to overnight minimum load levels for much of this period fall below the ratio's default floor value that would apply to the units in the absence of an exception.

⁵² The commenters generally chose not to discuss their opportunities to influence PJM's dispatch instructions. However, the comments do include some implicit recognition that those opportunities exist, most of which consist of qualifiers such as "in general," "not wholly," or "in large part" to various statements. The clearest confirmation that those opportunities exist is found in a statement by Key-Con that the proposed emission rates "will require Key-Con to forfeit most dispatch opportunities at lower electrical loads as directed by PJM and suffer resultant revenue impacts in order to maintain compliance with the limits." EPA views this statement as an implicit admission that Key-Con has the ability to "forfeit ... dispatch opportunities" when it believes such forfeiture is in its interest. Given PJM's undisputed role in directing units' dispatch, the only mechanism for a source to accomplish such a "forfeiture" would be for the source to provide information to PJM that causes PJM to issue dispatch instructions that do not require the units to dispatch at low load levels.

Finally, EPA notes that changes in the emissions and operating data reported by the Conemaugh and Keystone units for the first half of the 2022 ozone season relative to the data reported by these units for the 2021 ozone season appear to corroborate EPA's understanding that sources have the ability to influence PJM's dispatch decisions. During the periods of the 2021 ozone season when these units operated, a frequent operating pattern for each of the units was to cycle between a full load level of approximately 900 MW during daytime peak hours and a lower load level of approximately 440 MW during overnight off-peak hours, running their SCRs at the higher daytime loads and turning off their SCRs at the lower nighttime loads. During the periods of the first half of the 2022 ozone season when the units operated, while they continued to display the same general daytime-nighttime cycling pattern, the load levels to which they cycled down overnight were higher than in 2021, apparently producing flue gas temperatures sufficient to allow the units to run their SCRs overnight. Specifically, during May and June 2022 the Conemaugh units generally cycled down to a load level of approximately 545 MW, and the Keystone units generally cycled down to a load level of approximately 700 MW. EPA believes the reason for the change in overnight load levels is that the sources must have provided higher values of Economic Min (MW) to PJM for use in making dispatch decisions during the 2022 ozone season. Taking such a step would have increased the likelihood that the units would be given dispatch instructions that would allow them to run their SCRs continuously and would have been a rational response by the sources to the higher reported NO_x allowance prices during the 2022 ozone season.⁵³ In summary, EPA finds these comments unpersuasive when appropriately evaluated in the context of sources' extensive ability to influence PJM's decision-making, which is unchallenged in the comments.

IV. EPA's Final RACT Analysis and Emission Limits

⁵³ For the complete hourly data discussed in this paragraph, see PA SCR unit 2021-2022 hourly ozone season data.xlsx, available in the docket for this action. The spreadsheet contains graphs for each unit illustrating the changes in load levels and SCR operation described here. EPA notes that the 2022 data have not been used to set the emission limits being finalized in this rule but are being presented to support EPA's response to the sources' comments relating to PJM's control of dispatch decisions.

After consideration of all public comments, the EPA is establishing the 30-day NO_x Emission Rate Limits in Table 5 and Daily NO_x Mass Emission Limits in Table 8 for the four facilities covered by this FIP to meet the statutory requirement to implement RACT for the 1997 and 2008 ozone NAAQS.

Table 5: Facility-wide 30-Day Rolling Average NO_x Emission Rate Limits

Facility Name	Facility-wide 30-day Average Rate Limit (lb/MMBtu)
Conemaugh	0.072
Homer City	0.096
Keystone	0.075
Montour	0.102

The limits in Table 5 are based on a 30-day rolling average, and apply at all times, including during operations when exhaust gas temperatures at the SCR inlet are too low for the SCR to operate, or operate optimally. As discussed in the proposal and in response to comments, a 30-day average “smooths” operational variability by averaging the current value with the prior values over a rolling 30-day period to determine compliance. While some period of lb/MMBtu values over the target rate can occur without triggering a violation, they must be offset by corresponding periods where the lb/MMBtu rate is lower than the compliance rate (*i.e.*, the 30-day rolling average rate).

To calculate the final 30-day rates, EPA used the same weighted rate methodology from the proposal, with three key changes. The data underlying the weighted rates calculation for each unit is shown in Table 6 below.

Table 6: Unit-Specific Weighted Rates Data

Facility Name	Unit	SCR On Rate	SCR On Weight	SCR Off Rate	SCR Off Weight	Weighted Rate	Facility-Wide Average Weighted Rate
Conemaugh	1	0.070	98.5%	0.255	1.5%	0.073	0.072
Conemaugh	2	0.070	99.8%	0.258	0.2%	0.071	
Homer City	1	0.103	99.8%	0.341	0.2%	0.103	0.096

Homer City	2	0.087	99.3%	0.322	0.7%	0.088	
Homer City	3	0.096	99.6%	0.292	0.4%	0.097	
Keystone	1	0.041	86.7%	0.309	13.3%	0.076	0.075
Keystone	2	0.043	88.4%	0.312	11.6%	0.074	
Montour	1	0.045	81.5%	0.384	18.5%	0.108	0.102
Montour	2	0.047	85.7%	0.396	14.3%	0.096	

First, using information from the comments, EPA revised the SCR thresholds for certain sources. As explained previously, these thresholds are applied to the historical data set for the purpose of calculating SCR-on and SCR-off rates and weights to calculate the final weighted rates. EPA revised the thresholds for Homer City Units 1 and 2 and Montour Units 1 and 2. Homer City did not provide a revised threshold for Unit 3, so the same threshold from the proposal was used for the final calculation for that unit. Key-Con also did not provide updated thresholds for Keystone and Conemaugh, though their thresholds from the proposal were based on comments from Key-Con on the recommendation submitted to EPA by the Ozone Transport Commission (OTC) under CAA § 184(c).^{54,55} Table 7 of this preamble shows the thresholds used for the final calculation. As previously discussed, based on additional information received during the public comment period, the thresholds for Homer City Units 1 and 2 increased slightly, while the thresholds for Montour increased more significantly, as compared to the proposal.

Table 7: SCR Thresholds Used In Weighted Rates Analysis (Proposal vs. Final)

Facility Name	Unit	SCR Threshold, Proposal (MW)	SCR Threshold, Final (MW)
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⁵⁴ CAA section 184(a) establishes a commission for the OTR, the OTC, consisting of the Governor of each state or their designees, the Administrator or their designee, the Regional Administrators for the EPA regional offices affected (or the Administrator's designees), and an air pollution control official representing each state in the region, appointed by the Governor. Section 184(c) specifies a procedure for the OTC to develop recommendations for additional control measures to be applied within all or a part of the OTR if the OTC determines that such measures are necessary to bring any area in the OTR into attainment for ozone by the applicable attainment deadlines. On June 8, 2020, the OTC submitted a recommendation to EPA for additional control measures at certain coal-fired EGUs in Pennsylvania. See 85 FR 41972; July 13, 2020.

⁵⁵ Conemaugh and Keystone submitted data in response to the OTC's CAA section 184(c) recommendation identifying the MW input at which it typically operates or can operate the SCRs. EPA reviewed the historic operating data for these facilities as it did for Homer City, Montour, and Cheswick, and found that Keystone and Conemaugh's stated thresholds were consistent with the data. EPA thus relied upon the stated values for Keystone and Conemaugh in the development of this action's proposed rates.

Conemaugh	1	450	450
Conemaugh	2	450	450
Homer City	1	320	340
Homer City	2	320	335
Homer City	3	320	320
Keystone	1	660	660
Keystone	2	660	660
Montour	1	380	440
Montour	2	380	440

The threshold changes result in some changes to the data underlying the weighted rate calculation for Homer City Units 1 and 2 and Montour Units 1 and 2 from the proposal.⁵⁶ The changes to the SCR thresholds changed the SCR-on and -off rates for these units very slightly, as some hours went from being classified as SCR-on to SCR-off. The SCR-on and -off rates for the other units do not change from the proposal, and EPA is still using the rate based on the EGU's third-best ozone season average from 2003 to 2021 (second-best ozone season average for Conemaugh due to its more limited years of SCR data as compared to other units). The threshold changes altered the SCR-on and -off weights slightly for the Homer City units and substantially for the Montour units.

Second, while EPA is retaining the use of the third-best weight (the ozone season in which the EGU had its third highest proportion of heat input spent above the SCR threshold) from the period 2011 to 2021 for Homer City, Keystone, and Montour, EPA is using the second-best weight (the ozone season in which the EGU had its second highest proportion of heat input spent above the SCR threshold) for Conemaugh. As discussed previously in this action and in the proposal, Conemaugh installed its SCR much later than the other sources. In response to comments pointing out that Conemaugh's proposed limit was the highest despite having the newest SCR as well as to account for the more limited set of ozone seasons from which to draw data, the Agency believes it is reasonable to use the second-best weight instead of the third-best.

⁵⁶ See Appendix 2 of the TSD for the proposal to compare the proposed weights and rates to the final values in Table 6 of this preamble

EPA believes that the atypical result pointed out by the commenter stems mainly from the fact that using a third-best weight from a 7-year data set (as opposed to a third-best weight from an 11-year data set used for the other sources with more years of SCR data) would be more analogous to a mean rate, rather than the lowest rate the source was capable of achieving as RACT requires. Given EPA’s determination, informed by the Court decision, that RACT should represent a better rate than a mean rate, we believe that for Conemaugh, the second-best weight would provide a more comparable weight, while still excluding the low end. This results in a tightening of Conemaugh’s final limit, as compared to the proposal. EPA still believes it is reasonable to use the time period 2011 to 2021 from which to draw the weights for Homer City, Keystone, and Montour for the final limit. EPA re-examined the occurrence of cycling at these facilities and found that the drop in time spent above the SCR threshold begins within this time period for these sources.

Third, as discussed in section III of this preamble, because of the unit-specific nature of EPA’s weighted rate analysis, the EPA expects that the unit-specific rates already represent RACT for each unit, and that the most appropriate basis for a facility-wide average would be the weighted rates for each of the units at the facility. Therefore, EPA is calculating the final facility-wide 30-day limits as an arithmetic average of the results of the weighted rates calculation for each unit at the facility, instead of applying the best unit-specific weighted rate facility-wide.

Table 8: Revised Unit-specific Daily NO_x Mass Emissions Limits

Facility Name	Unit	Unit-Specific Mass Limit (lb/day)
Conemaugh	1	14,308
Conemaugh	2	14,308
Homer City	1	15,649
Homer City	2	15,649
Homer City	3	16,727
Keystone	1	15,691
Keystone	2	15,691
Montour	1	17,912
Montour	2	17,721

The final daily limits in Table 8, which complement the facility-wide 30-day rate and further ensure RACT is applied continuously, are calculated using the same methodology as the proposal but with the updated final 30-day limits as shown in Table 5 of this preamble. The final 30-day limits are multiplied by each unit's maximum permitted heat input (in MMBtu/hr) by 24 hours.

V. Final Action

Based on the considerations outlined at proposal, consideration of all public comments, and for the reasons described in this action, EPA is establishing the 30-day NO_x emission rate limits in Table 5 of this preamble, Daily NO_x mass emission limits in Table 8 of this preamble, and accompanying regulatory language added to 40 CFR 52.2065, as major stationary source NO_x RACT requirements for the 1997 and 2008 ozone NAAQS at four facilities in Pennsylvania: Conemaugh; Homer City; Keystone; and Montour.

VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at <https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This final action is a rule of particular applicability and therefore is exempt from Office of Management and Budget (OMB) review.

B. Paperwork Reduction Act

This proposed action does not impose an information collection burden under the provisions of the Paperwork Reduction Act (PRA).⁵⁷ A “collection of information” under the PRA means “the obtaining, causing to be obtained, soliciting, or requiring the disclosure to an

⁵⁷ 44 U.S.C. 3501 *et seq.*

agency, third parties or the public of information by or for an agency by means of identical questions posed to, or identical reporting, recordkeeping, or disclosure requirements imposed on, *ten or more persons*, whether such collection of information is mandatory, voluntary, or required to obtain or retain a benefit.”⁵⁸ Because this proposed rule includes RACT reporting requirements for four facilities, the PRA does not apply.

C. Regulatory Flexibility Act

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action does not affect small governmental jurisdictions or small organizations, and the affected entities are not small businesses as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201. Therefore, this action will not impose any requirements on small entities.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of \$100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

Executive Order 13175, entitled “Consultation and Coordination with Indian Tribal Governments,” requires the EPA to develop an accountable process to ensure “meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.”⁵⁹ This rule does not have tribal implications, as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments. Thus, Executive Order

⁵⁸ 5 CFR 1320.3(c) (emphasis added).

⁵⁹ 65 FR 67249, 67250 (November 9, 2000).

13175 does not apply to this rule.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it implements a previously promulgated health-based Federal standard. Further, the EPA believes that the ozone-related benefits from this final rule will further improve children’s health.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

This rulemaking does not involve technical standards.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 establishes Federal executive policy on environmental justice.⁶⁰ Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority populations and low-income populations in the United States.

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations and/or

⁶⁰ Executive Order 12898 can be found 59 FR 7629 (February 16, 1994).

indigenous peoples, as specified in Executive Order 12898. EPA reviewed the Regulatory Impact Analysis (RIA) prepared for the recently proposed 2015 Ozone NAAQS transport FIP, and in particular the Ozone Exposure Analysis at section 7.4 of the RIA.⁶¹ Although that analysis projected reductions in overall AS-MO3 ozone concentrations in each state for all affected demographic groups resulting from newly proposed limits on EGUs and non-EGUs (See Figure 7-3 of the RIA), it also found that emission reductions from only EGUs would result in national reductions in AS-MO3 ozone concentrations for all demographic groups analyzed (See Figure 7-2 of the RIA). In summation, based on the analysis contained in that RIA, EPA has concluded that the FIP is expected to lower ozone in many areas, including residual ozone nonattainment areas, and thus mitigate some pre-existing health risks of ozone across all populations evaluated (RIA, p. 7-32). Further, EPA reviewed an analysis of vulnerable groups near the Conemaugh, Homer City, and Keystone EGUs found in the TSD for EPA's proposed disapproval of the SO₂ attainment plan for the Indiana, PA SO₂ nonattainment area.⁶²

K. Congressional Review Act (CRA)

This rule is exempt from the CRA because it is a rule of particular applicability.

VII. Petitions for Judicial Review

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action.

⁶¹ The RIA for that separate EPA action can be found at www.regulations.gov under the docket number EPA-HQ-OAR-2021-0668. Section 7.4 begins on page 7-9.

⁶² See www.regulations.gov, Docket EPA-R03-OAR-2017-0615-0059, pp. 14 -17.

This action setting RACT limits for certain EGUs in Pennsylvania may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Continuous emission monitoring, Electric power plants, Incorporation by reference, Nitrogen oxides, Ozone, Reporting and recordkeeping requirements.

Michael S. Regan,
Administrator.

For the reasons stated in the preamble, the EPA amends 40 CFR part 52 as follows:

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 et seq.

Subpart NN—Pennsylvania

2. Section 52.2065 is added to subpart NN to read as follows:

§ 52.2065 Federal implementation plan addressing reasonably available control technology requirements for certain sources.

(a) *Applicability.* This section shall apply to Conemaugh, Homer City, Keystone, and Montour, as defined in this section, as well as any of their successors or assigns. Each of the four listed facilities are individually subject to the requirements of this section.

(b) *Effective date.* The effective date of this section is **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

(c) *Compliance date.* Compliance with the requirements in this section shall commence on **[INSERT DATE 210 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, except the Facility-wide 30-Day Rolling Average NO_x Emission Rate Limit requirement in (f)(1) of this section will commence for the Facility on the day that Facility has operated for thirty (30) Operating Days after, and possibly including, the compliance date of **[INSERT DATE 210 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

(d) *General provisions.* This section is not a permit. Compliance with the terms of this section does not guarantee compliance with all applicable Federal, state, or local laws or regulations. The emission rates and mass emissions limits set forth in this section do not relieve the facility from any obligation to comply with other State and Federal requirements under the

Clean Air Act, including the Facility's obligation to satisfy any State requirements set forth in the applicable SIP.

(e) *Definitions.* Every term expressly defined by this section shall have the meaning given to that term within this section. Every other term used in this section that is also a term used under the Act or in Federal regulations in this chapter implementing the Act shall mean in this section what such term means under the Act or the regulations in this chapter.

CEMS or Continuous Emission Monitoring System, means, for obligations involving the monitoring of NO_x emissions under this section, the devices defined in 40 CFR 72.2 and installed and maintained as required by 40 CFR part 75.

Clean Air Act or Act means the Federal Clean Air Act, 42 U.S.C. 7401-7671q, and its implementing regulations in this chapter.

Conemaugh means, for purposes of this section, Keystone Conemaugh Project LLC's Conemaugh Generating Station consisting of two coal-fired units designated as Unit 1 (8,280 MMBtu/hr) and Unit 2 (8,280 MMBtu/hr), located in West Wheatfield Township, Indiana County, Pennsylvania.

Day or daily means calendar day unless otherwise specified in this section.

EGU means electric generating unit.

EPA means the United States Environmental Protection Agency.

Facility means each of the following as defined in this section: Conemaugh; Homer City; Keystone; and Montour.

Facility-wide 30-Day Rolling Average NO_x Emission Rate for the Facility shall be expressed in lb/MMBtu and calculated in accordance with the following procedure: first, sum the total pounds of NO_x emitted from all Units during the current Operating Day and the previous twenty-nine (29) Operating Days; second, sum the total heat input from all Units in MMBtu during the current Unit Operating Day and the previous twenty-nine (29) Operating Days; and third, divide the total number of pounds of NO_x emitted from all Units during the thirty (30)

Operating Days by the total heat input during the thirty (30) Operating Days. A new Facility-wide 30-Day Rolling Average NO_x Emission Rate shall be calculated for each new Operating Day. Each 30-Day Rolling Average NO_x Emission Rate shall include all emissions that occur during all periods within any Operating Day, including, but not limited to, emissions from startup, shutdown, and malfunction.

Fossil fuel means any hydrocarbon fuel, including coal, petroleum coke, petroleum oil, fuel oil, or natural gas.

Homer City means, for purposes of this section, Homer City Generation LP's Homer City Generating Station consisting of three coal-fired units designated as Unit 1 (6,792 MMBtu/hr), Unit 2 (6,792 MMBtu/hr), and Unit 3 (7,260 MMBtu/hr), located in Center Township, Indiana County, Pennsylvania.

Keystone means, for purposes of this section, Keystone Conemaugh Project LLC's Keystone Generating Station consisting of two coal-fired units designated as Unit 1 (8,717 MMBtu/hr) and Unit 2 (8,717 MMBtu/hr), located in Plumcreek Township, Armstrong County, Pennsylvania.

lb/MMBtu means one pound per million British thermal units.

Montour means, for purposes of this section, Talen Energy Corporation's Montour Steam Electric Station consisting of two coal-fired units designated as Unit 1 (7,317 MMBtu/hr) and Unit 2 (7,239 MMBtu/hr), located in Derry Township, Montour County, Pennsylvania.

"NO_x" means oxides of nitrogen, measured in accordance with the provisions of this section.

"NO_x emission rate" means the number of pounds of NO_x emitted per million British thermal units of heat input (lb/MMBtu), calculated in accordance with this section.

Operating day means any calendar day on which a Unit fires Fossil Fuel.

Title V Permit means the permit required for major sources pursuant to Subchapter V of the Act, 42 U.S.C. 7661-7661e.

Unit means collectively, the coal pulverizer, stationary equipment that feeds coal to the boiler, the boiler that produces steam for the steam turbine, the steam turbine, the generator, the equipment necessary to operate the generator, steam turbine, and boiler, and all ancillary equipment, including pollution control equipment and systems necessary for production of electricity. An electric steam generating station may be comprised of one or more Units.

Unit-specific daily NOx mass emissions shall be expressed in lb/day and calculated as the sum of total pounds of NOx emitted from the Unit during the Unit Operating Day. Each Unit-specific Daily NOx Mass Emissions shall include all emissions that occur during all periods within any Operating Day, including emissions from startup, shutdown, and malfunction.

(f) *NOx emission limitations.* (1) The Facility shall achieve and maintain their Facility-wide 30-Day Rolling Average NOx Emission Rate to not exceed their Facility limit in Table 1 to this paragraph (f)(1).

Table 1 to paragraph (f)(1)–Facility-wide 30-Day Rolling Average NOx Emission Rate Limits

Facility	Facility-wide 30-Day Rolling Average NOx Emission Rate Limit (lb/MMBtu)
Conemaugh	0.072
Homer City	0.096
Keystone	0.075
Montour	0.102

(2) The Facility shall achieve and maintain their Unit-specific Daily NOx Mass Emissions to not exceed the Unit-specific limit in Table 2 to this paragraph (f)(2).

Table 2 to paragraph (f)(2)–Unit-specific Daily NOx Mass Emissions Limits

Facility	Unit	Unit-Specific Daily NOx Mass Emissions Limit (lb/day)
Conemaugh	1	14,308
Conemaugh	2	14,308

Homer City	1	15,649
Homer City	2	15,649
Homer City	3	16,727
Keystone	1	15,691
Keystone	2	15,691
Montour	1	17,912
Montour	2	17,721

(g) *Monitoring of NO_x emissions.* (1) In determining the Facility-wide 30-Day Rolling Average NO_x Emission Rate, the Facility shall use CEMS in accordance with the procedures of 40 CFR parts 60 and 75, appendix F, Procedure 1.

(2) For purposes of calculating the Unit-specific Daily NO_x Mass Emissions Limits, the Facility shall use CEMS in accordance with the procedures at 40 CFR part 75. Emissions rates, mass emissions, and other quantitative standards set by or under this section must be met to the number of significant digits in which the standard or limit is expressed. For example, an Emission Rate of 0.100 is not met if the actual Emission Rate is 0.101. The Facility shall round the fourth significant digit to the nearest third significant digit, or the sixth significant digit to the nearest fifth significant digit, depending upon whether the limit is expressed to three or five significant digits. For example, if an actual emission rate is 0.1004, that shall be reported as 0.100, and shall be in compliance with an emission rate of 0.100, and if an actual emission rate is 0.1005, that shall be reported as 0.101, and shall not be in compliance with an emission rate of 0.100. The Facility shall report data to the number of significant digits in which the standard or limit is expressed.

(h) *Recordkeeping and periodic reporting.* (1) The Facility shall electronically submit to EPA a periodic report, within thirty (30) Days after the end of each six-month reporting period (January through June, July through December in each calendar year). The portion of the periodic report containing the data required to be reported by this paragraph (h) shall be in an

unlocked electronic spreadsheet format, such as Excel or other widely-used software, and contain data for each Operating Day during the reporting period, including, but not limited to: Facility ID (ORISPL); Facility name; Unit ID; Date; Unit-specific total Daily Operating Time (hours); Unit-specific Daily NO_x Mass Emissions (lbs); Unit-specific total Daily Heat Input (MMBtu); Unit-specific Daily NO_x Emission Rate (lb/MMBtu); Facility-wide 30-Day Rolling Average NO_x Emission Rate (lb/MMBtu); Owner; Operator; Representative (Primary); and Representative (Secondary). In addition, the Facility shall maintain the following information for 5 years from the date of creation of the data and make such information available to EPA if requested: Unit-specific hourly heat input, Unit-specific hourly ammonia injection amounts, and Unit-specific hourly NO_x emission rate.

(2) In any periodic report submitted pursuant to this section, the Facility may incorporate by reference information previously submitted to EPA under its Title V permitting requirements, so long as that information is adequate to determine compliance with the emission limits and in the same electronic format as required for the periodic report, and provided that the Facility attaches the Title V Permit report (or the pertinent portions of such report) and provides a specific reference to the provisions of the Title V Permit report that are responsive to the information required in the periodic report.

(3) In addition to the reports required pursuant to this section, if the Facility exceeds the Facility-wide 30-day rolling average NO_x emission limit on three or more days during any 30-day period, or exceeds the Unit-specific daily mass emission limit for any Unit on three or more days during any 30-day period, the Facility shall electronically submit to EPA a report on the exceedances within ten (10) business days after the Facility knew or should have known of the event. In the report, the Facility shall explain the cause or causes of the exceedances and any measures taken or to be taken to cure the reported exceedances or to prevent such exceedances in the future. If, at any time, the provisions of this section are included in Title V Permits, consistent with the requirements for such inclusion in this section, then the deviation reports

required under applicable Title V regulations shall be deemed to satisfy all the requirements of this paragraph (h)(3).

(4) Each report shall be signed by the Responsible Official as defined in Title V of the Clean Air Act, or his or her equivalent or designee of at least the rank of Vice President. The signatory shall also electronically submit the following certification, which may be contained in a separate document:

“This information was prepared either by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my evaluation, or the direction and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, I hereby certify under penalty of law that, to the best of my knowledge and belief, this information is true, accurate, and complete. I understand that there are significant penalties for submitting false, inaccurate, or incomplete information to the United States.”

(5) Whenever notifications, submissions, or communications are required by this section, they shall be made electronically to the attention of the Air Enforcement Manager via email to the following address: R3_ORC_mailbox@epa.gov.